SERVICE MANUAL & PARTS LIST (without price)

CW-8800 (VX-862)

Feb. 1993

CW-8800

INDEX

CASIO®

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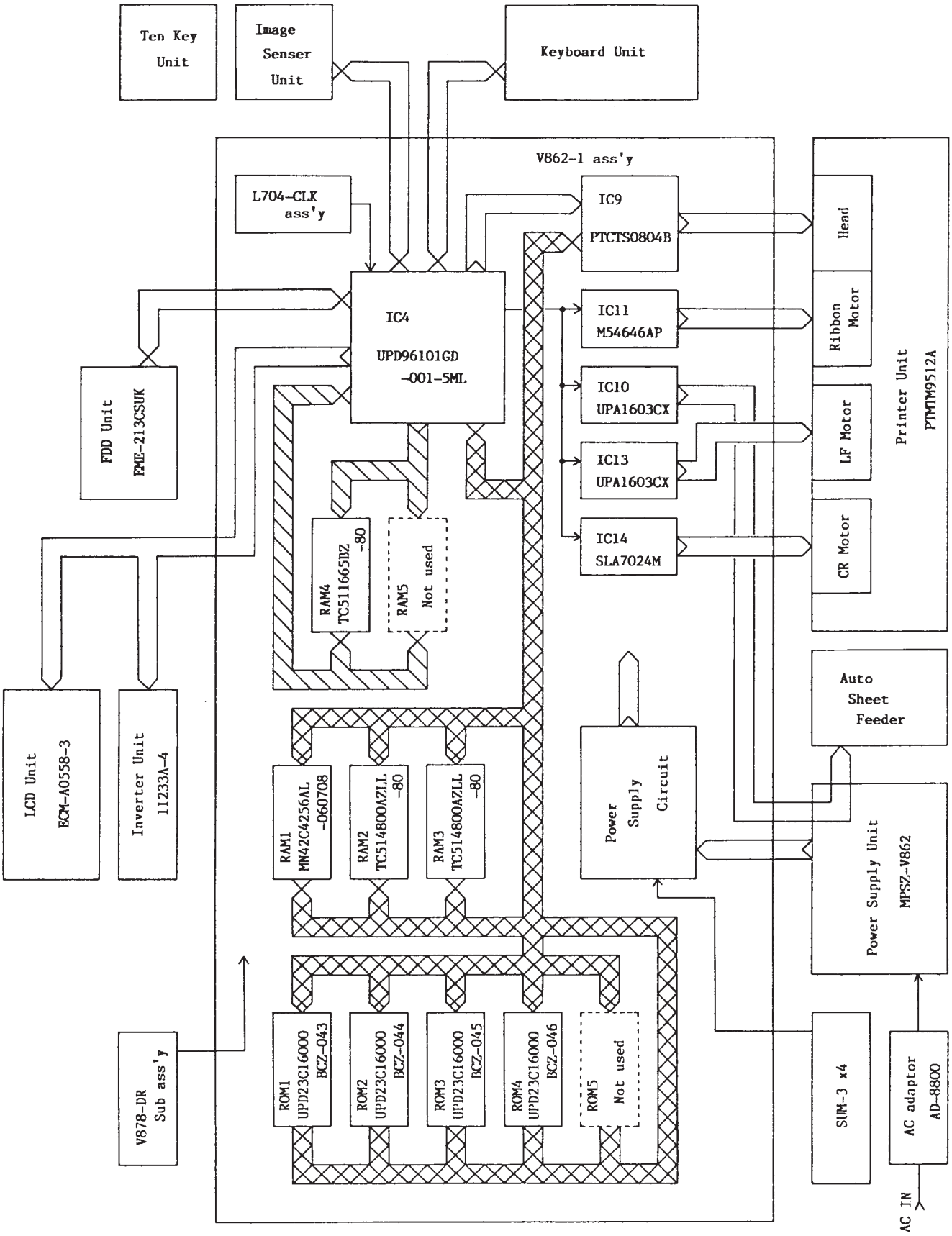
II SPECIFICATIONS

輸入	按鍵配置	ASCII標準	
	變換方式	單字輸入 倉頡／簡易倉頡／注音／北京拼音／廣東拼音／電信／TCA碼／GB碼 辭彙輸入 倉頡／注音／北京拼音／廣東拼音	
辭彙	內藏辭彙數	基本辭彙：約34941詞	
文字數	文字種	繁體	簡體
		非漢字符號：740字	非漢字符號：740字
		①宋體 常用字：5401字 次常用字：7650字 ②黑體 常用字：5401字 次常用字：7650字	①宋體 1級漢字：3755字 2級漢字：3008字 ②仿宋體 1級漢字：3755字 2級漢字：3008字 ③磁片字體（黑體） 1級漢字：3755字 2級漢字：3008字 ④磁片字體（楷體） 1級漢字：3755字 2級漢字：3008字
	造字登錄數	最大32個	
顯示	顯示方式	背光 STN 液晶顯示	
	顯示字數	（標準顯示／16×16點） 40字×16行+SYSTEM行4 行	
	佈局顯示	頁版面表示、印刷版面表示	
印刷	印刷方式	熱感方式	
	用紙種類	普通紙（使用色帶） 熱感紙（不使用色帶） 蠟紙（不使用色帶）	
	文字構成	＜中文模式＞可自4 P(18×18點)至64P(292 ×292 點)以 1P為單位指定，最大可指定12×12倍形文字以內的 528種文字字號，以下的字號是可用功能鍵指定的基本字號。 4 P(18×18點)、6 P(28×28點)、8 P(36×36點)、 10.5P(48×48點)、12P(54×54點)、14P(64×64點) 、16P(74×74點)、18P(82×82點)、20P(92×92點) ＜英文模式＞10CPI(48×36點)、12CPI(48×30點)	

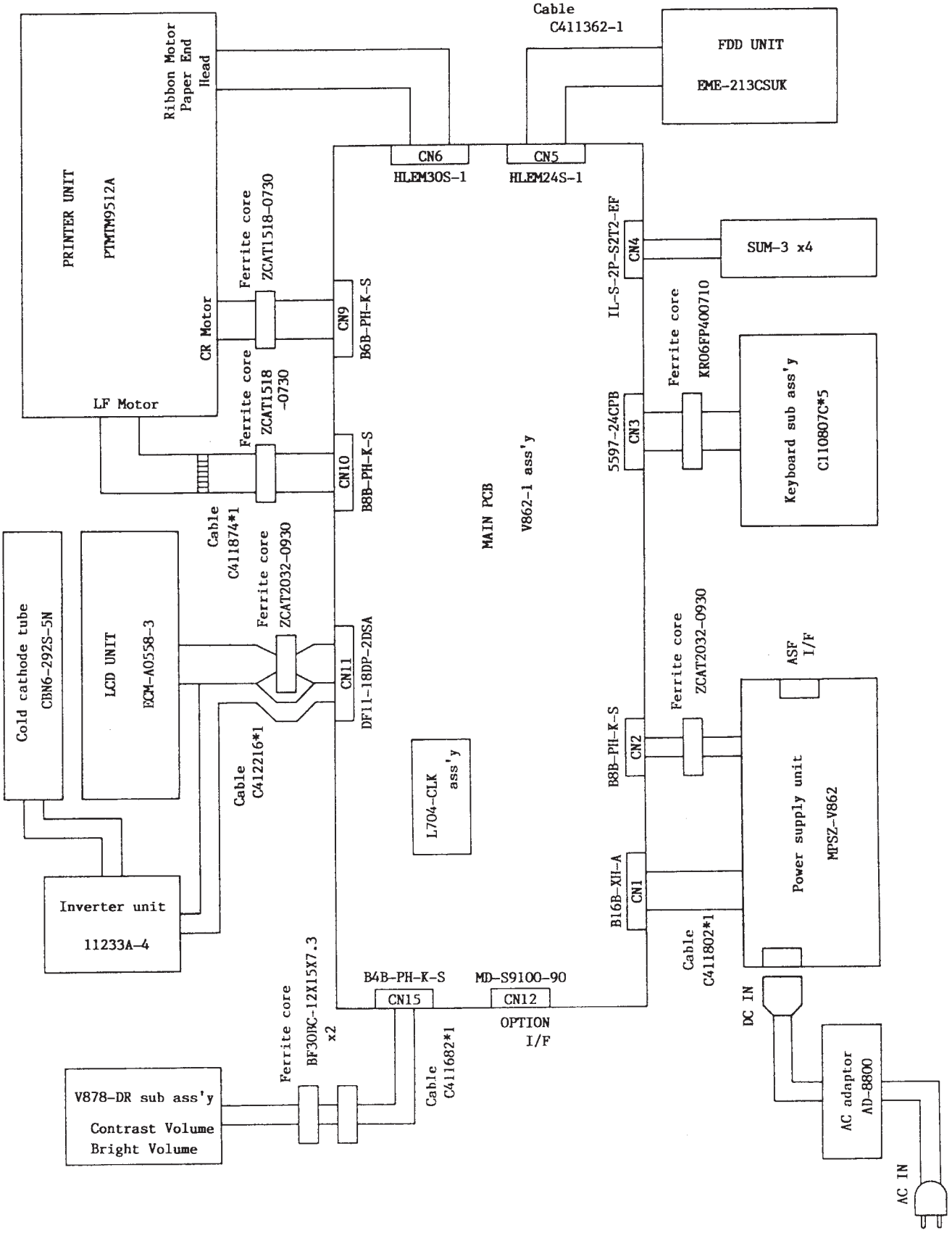
印刷	用紙尺寸	B4、A4、B5、A5、B6、A6
	印刷幅	最大B4橫
	印刷速度	約231.5字／秒（10.5P行距字距3.4mm，印刷模式為高速指定）
	印刷字數	＜中文模式＞B4橫尺寸、指定4 P時最大267 字／行、指定10.5P時最大99字／行等等字號可變化（最大允許值內） ＜英文模式＞1/10、1/12英吋
	字距	＜中文模式＞可指定8/8、9/8、10/8、11/8、12/8字及文字尺寸60mm至0.1mm單位 ＜英文模式＞1/10、1/12英吋
	行距	＜中文模式＞可指定8/8、10/8、15/8、20/8 行及文字尺寸60mm至0.1mm單位 ＜英文模式＞2/12、3/12、4/12英吋
	印刷功能	●全文●部分●複寫●磁片內文書●縱・橫寫●用紙方向縱・橫●半形●全形●縱、橫倍形●任意倍形（12×12倍止）●標準文字●空心字●陰影字●粗體字●反白字●斜體字（２種）●旋轉字（３種）●虛體字●套網（７種）●底線（７種）●雙頁●分欄●頁印刷●禁則處理●彩色印刷（選購彩色色帶使用時）●編輯並行印刷●向量印刷●頁首●頁尾●私有名稱印刷●原稿用紙印刷●信紙印刷●報告用紙印刷●原版製作印刷●超級變形文字●壁紙印刷等等・
	文字體	每一文字都可指定宋體，黑體（繁體） 每一文字都可指定宋體，仿宋體，磁片字體（簡體）
編輯	文書編輯功能	●左右邊界設定●TAB ●十進TAB ●BACK TAB●縮進●檢索●置換●文字移動●文字複寫●矩形移動●矩形複寫●總括移動●總括複寫●圖形移動●圖形複寫●線種變更●圖形刪除●圖形套網●圖形修改●圖形放大縮小●格線移動●格線複寫●格線種類變更●格線刪除●格線修正●區域●圖像合成●圖像區域生成●向中對齊●向右對齊●均等排列●套網●底線●行格式●複數文書編輯●重疊輸入●文字尺寸變更●輸入文字尺寸指定●字體指定●繁簡切換●自動段落●列對齊
	英文功能	自動下折（輸入時）、重排、10CPI/12CPI
設定		●格式設定●行格式●環境設定●日期時間設定
備份功能		電源關閉時，會儲存文書、造字・
超高速系統		640KB （具有備份功能）

外部記憶	記憶媒體	3.5 英吋磁碟機／雙面雙密度
	容　量	使用者容量／709KB（格式化後）、2DD 磁片一片約A4用紙270 頁份 ＜一般文書＞可登錄110 個檔案・ ＜目錄使用時＞目錄：最大可登錄93個・ 文書：各目錄內最大可登錄93個檔案・
試算表功能	表尺寸	最大125 字×2000行／250 字×1000行／500 字×500 行
	表作成、編輯	●行欄插入●行欄刪除●行欄移動●行欄複寫●檢索●置換●空檢索●欄分割●欄合成●位數變更●自動加標點●CODE輸入●向左對齊●向中對齊●向右對齊●格線輸入●格線刪除●排序●條件檢索●表接續●累計●名次排列●表切換（最大可同時使用八個表）
	計　算	●縱、橫計算●單元計算●函數計算（53種）●2 元計算●逐次再計算●總括再計算
	圖　表	●7 種（長條圖、積累圖、折線圖、帶狀圖、圖形圖、條●線圖、雷達圖）●圖表範圍自動指定 ●圖表範圍指定 ●圖表模樣變更（12種）●圖表標題●圖表儲存
	作業狀態	未結束表處理前可切換「文書處理」模態・
備忘錄功能		約可輸入1960字
計算機功能		10位數的四則計算、獨立記憶計算、平方根（ROOT）計算、定數計算
超高速系統功能		可同時編入三個磁片上的程式
其他功能		●筆式印刷（選購）●圖像處理（選購：圖像掃描機）●SHEETPLAN II●自動編輯●簾幕印刷
電源	使用電源	本體用：AC ADAPTER AD-8800 記憶備存電池：3 號乾電池
	消費電力	AC100-240V 0.64A
外型尺寸		380（寬）×400（長）×108.5（高）mm
重　量		6.3kg（含電池）
附屬品		黑色色帶1 個、文書處理機用紙、系統磁片、3 號電池4 個 電源ADAPTER 、萬用插頭、墊紙、字體字型磁片4 片

2 BLOCK DIAGRAM



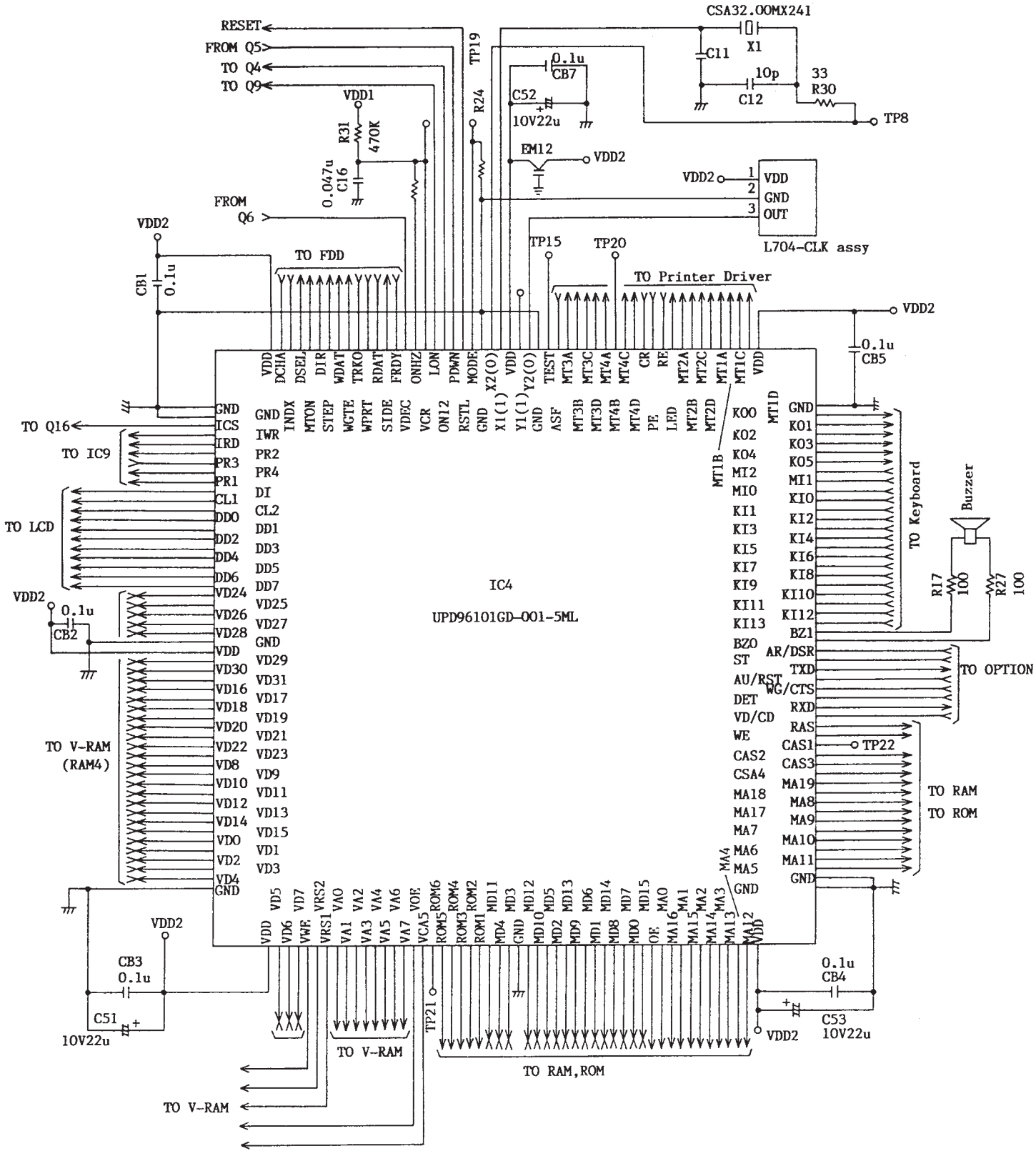
3 WIRING DIAGRAM



4 CIRCUIT EXPLANATIONS

4-1 CPU (UPD96101GD-001-5ML) <IC4>

This IC is made as custom-built LSI and contained the 16bit micro-processor.
All devices are controled by this IC.
Even if the power switch is turned OFF, this IC always works by the back-up voltage VDD2.



4-2 CPU pin description (UPD96101GD-001-5ML)

Pin No.	Name	In/Out	Description
1, 2, 26, 52, 79, 105, 106, 156, 180, 186	GND	In	Logic ground. (0V)
3	iCS	Out	Chip select signal for CR Motor driver IC14 (SLA7024M).
4	iWR	Out	Write signal for Head driver IC9 (PTCTS0804B).
5	iRD	Out	Read signal for Head driver IC9 (PTCTS0804B).
6	PR2	Out	Chip select signal for Head driver IC9 (PTCTS0804B).
7	PR3	In	Ready signal for Head driver IC9 (PTCTS0804B).
8	PR4	Out	Reset signal for Head driver IC9 (PTCTS0804B).
9	PR1	Out	Clock signal for Head driver IC9 (PTCTS0804B). Not used.
10	DI	Out	Scan start signal for LCD unit (ECM-A0558-3).
11, 12	CL1, CL2	Out	Clock signals for LCD unit (ECM-A0558-3).
13 ~ 16	DD0 ~ DD3	Out	Upper display data for LCD unit (ECM-A0558-3).
17 ~ 20	DD4 ~ DD7	Out	Lower display data for LCD unit (ECM-A0558-3).
21 ~ 25	VD24 ~ VD28	In/Out	Display data for video RAM5. Not used.
27, 53, 104, 157, 183, 208	VDD	In	Logic voltage. (+5V) This terminal is supplied the back-up voltage VDD2.
28 ~ 30, 31 ~ 38	VD29 ~ VD31 VD16 ~ VD23	In/Out	Display data for video RAM5. Not used.
39 ~ 46, 47 ~ 51, 54 ~ 56	VD8 ~ VD15 VD0 ~ VD4 VD5 ~ VD7	In/Out	Display data for video RAM4 (TC511665BZ-80).
57	VWE	Out	Write signal for video RAM4 (TC511665BZ-80).
58	VRS2	Out	RAS (Row Address Strobe) signal for video RAM5. Not used.
59	VRS1	Out	RAS signal for video RAM4 (TC511665BZ-80).
60 ~ 67	VA0 ~ VA7	Out	Address bus signals for video RAM4 (TC511665BZ-80).
68	VOE	Out	Read signal for video RAM4 (TC511665BZ-80).
69	VCAS	Out	CAS (Column Address Strobe) signal for video RAM4 (TC511665BZ-80).
70	ROM6	Out	Chip enable signal for ROM6. Not used.
71 ~ 75	ROM5 ~ ROM1	Out	Chip enable signals for ROM5 to ROM1.
76 ~ 78, 80 ~ 92	MD0 ~ MD15	In/Out	Memory Data bus for RAM1 to RAM3 and ROM1 to ROM5.
93	OE	Out	Read signal for RAM1 to RAM3 and ROM1 to ROM5.
94 ~ 103, 107 ~ 116	MA0 ~ MA19	Out	Memory Address bus for RAM1 to RAM3 and ROM1 to ROM5.

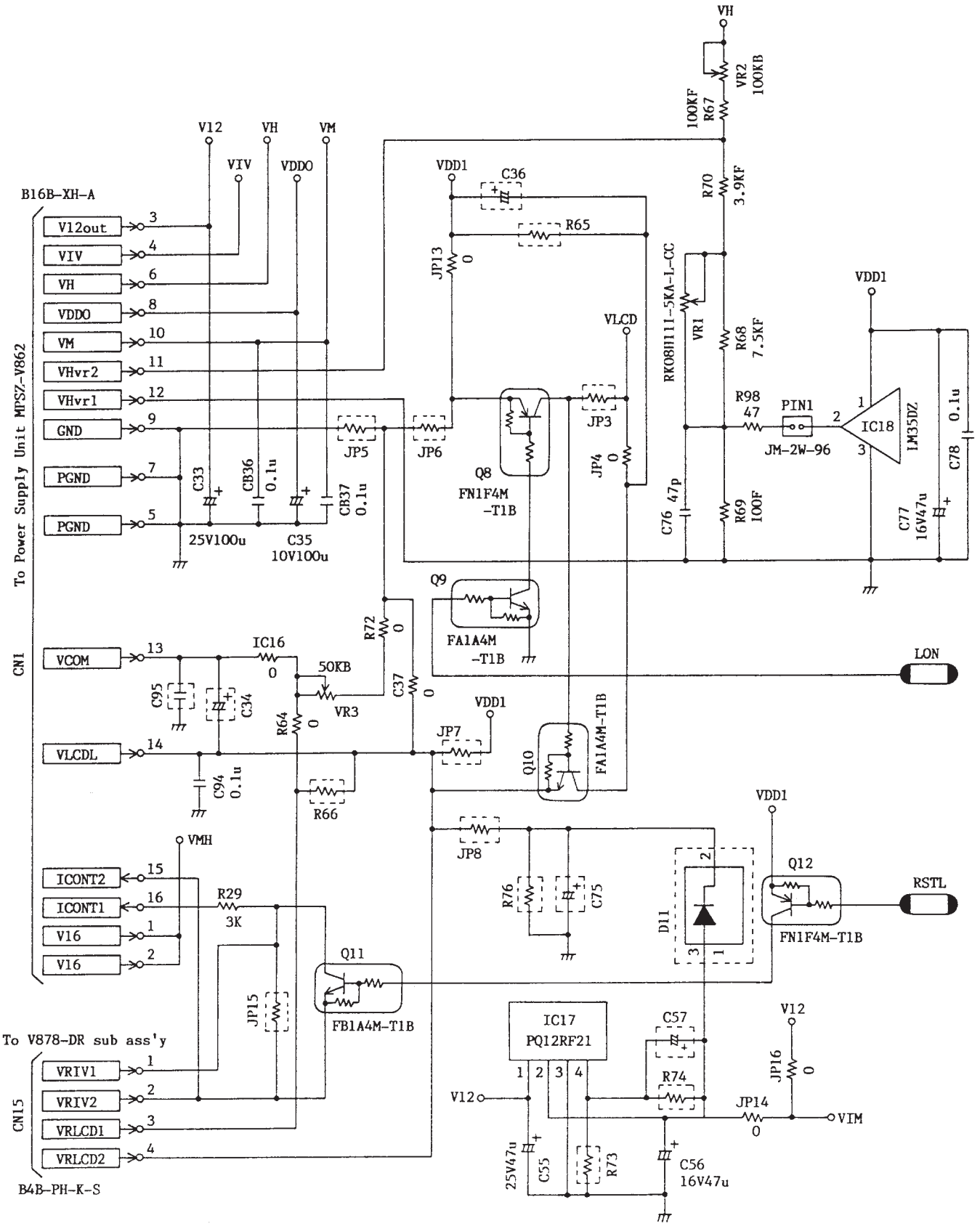
Pin No.	Name	In/Out	Description
117 ~ 120	CAS4 ~ CAS1	Out	CAS signals for RAM1 to RAM3. CAS1 is not used.
121	WE	Out	Write signal for RAM1 to RAM3.
122	RAS	Out	RAS signal for RAM1 to RAM3.
123	VD/CD	In	When setting Image Senser Unit, Video data (Image Data) input terminal.
124	RXD	Out	When setting Image Senser Unit, Timing pulse output.
125	DET	In	When setting Image Senser Unit, this terminal becomes GND.
126	WG/CTS	In	When setting Image Senser Unit, Write timing pulse input.
127	AU/RTS	In	When setting Image Senser Unit, Address up signal input.
128	TXD	Out	When setting Image Senser Unit, this terminal is not used.
129	ST	In	When setting Image Senser Unit, Scan timing signal input.
130	AR/DSR	In	When setting Image Senser Unit, Address reset signal input.
131, 132	BZ0, BZ1	Out	Buzzer signal for BZ1 (PKM22EPT-2001).
133 ~ 146, 147 ~ 149	KI13 ~ KI0 MI0 ~ MI2	In	Key input signals from Keyboard.
150 ~ 155	KO5 ~ KO0	Out	Key output signals to Keyboard.
158 ~ 161	MT1D ~ MT1A	Out	Drive signals for LF Motor of Printer Unit.
162 ~ 165	MT2D ~ MT2A	Out	Drive signals for CR Motor of Printer Unit.
166	LED	Out	LED drive signal for Ribbon End senser and Paper End senser.
167	RE	In	Ribbon End signal from Ribbon End senser.
168	PE	In	Paper End signal from Paper End senser.
169	CR	In	Home position switch signal for Carriage unit.
170	MT4D	Out	Drive signal for RF Motor IC11 (M54646AP).
171, 173	MT4C, MT4A	Out	Drive signals for RF Motor of Printer Unit.
172	MT4B	Out	Not used.
174 ~ 177	MT3D ~ MT3A	Out	Drive signals for Motor of Auto Sheet Feeder.
178	ASF	In	When setting Auto Sheet Feeder, this terminal becomes GND.
179	TEST	In	For Test.
181	Y2(0)	In	Clock signal input terminal from L704-CLK ass'y.
182	Y1(1)	In	Clock signal input terminal. Not used.
184, 185	X1(1), X2(0)	In	Clock signal input terminals from 32MHz Ceramic oscillator X1.
187	MODE	In	This terminal is GND.
188	RSTL	Out	Reset signal from internal MPU.
189	PDWN	In	Power Down signal from a voltage detector for back-up battery.

Pin No.	Name	In/Out	Description
190	ON12	Out	When this terminal becomes high level, Option I/F is supplied +12V.
191	LON	Out	LCD voltage On/Off control terminal.
192	VCR	In	Capacitor and Resistor connecting terminal.
193	ONHZ	In	Resistor connecting terminal.
194	VDEC	In	Reset signal input terminal.
195	FRDY	In	Ready signal from FDD Unit.
196	SIDE	Out	Side select signal to FDD Unit.
197	RDAT	In	Read data from R/W Head of FDD Unit.
198	WPRT	In	Write Protect signal from FDD Unit.
199	TRK0	In	Track 00 signal from FDD Unit.
200	WGTE	Out	Write Gate signal to FDD Unit.
201	WDAT	Out	Write Data to R/W Head of FDD Unit.
202	STEP	Out	Step signal to Motor of FDD Unit.
203	DIR	Out	Direction signal to Motor of FDD Unit.
204	MTON	Out	Motor On signal to FDD Unit.
205	DSEL	Out	Drive select signal to FDD Unit.
206	INDX	In	Index pulse from FDD Unit.
207	DCHA	In	Disk Change signal from FDD Unit.

4-3 POWER SUPPLY CIRCUIT

The DC voltage +16.5V±0.5V is supplied from AC Adaptor AD-8800 to Power Supply Unit MPSZ-V862.
When the power switch on MPSZ-V862 is turned ON, the following voltages supply to V862-1 ass'y (Main PCB).

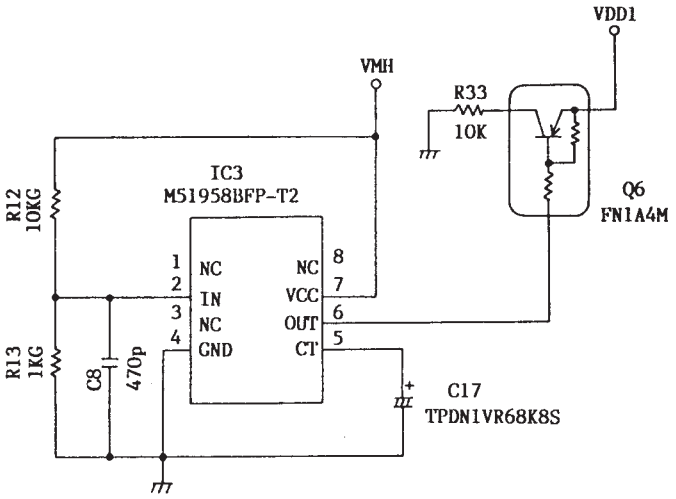
Input voltage from MPSZ-V862	Teminal No.	Specifications	Note
VH	6	+46.0V ~ +44.1V	The voltage depends on Printer Head Lank 1 ~ 6.
V12out	3	+12.6V ~ +17.0V +12.6V ~ +14.4V	This circuit is +12.6V.
VM	10	+7.9V ±0.3V	This voltage is for Printer.
VDD0	8	+5.4V ±0.2V	Logic voltage.
V16	1, 2	+16.5V +0.5V/-0.8V	This voltage is for Printer.
VCOM	13	-19.6V ±0.1V	This voltage is adjusted by Volume.
VIV	4	+23V	This voltage is adjusted by Volume.


To Power Supply Unit MPSZ-V862
B16B-XH-A
CN1
V12out
VIV
VH
VDDO
VM
VHvr2
VHvr1
GND
PGND
PGND
V12
VIV
VH
VM
VDDO
C33
25V100u
CB36
0.1u
C35
10V100u
CB37
0.1u
VDD1
C36
R65
JP13
0
JP5
JP6
Q8
FN1F4M
-T1B
JP3
JP4
0
VLCD
VH
100KF
R67
VR2
100KB
R70
3.9KF
RK08H1111-5KA-L-CC
VR1
R68
7.5KF
R69
100F
C76
47p
VDD1
R98
47
PIN1
JM-2W-96
IC18
LM35DZ
C77
16V47u
C78
0.1u
Q9
FA1A4M
-T1B
R72
0
IC16
0
50KB
VR3
C37
0
LON
VCOM
C95
C34
R64
0
VLCDL
C94
0.1u
R66
VDD1
JP7
Q10
FA1A4M-T1B
JP8
VDD1
Q12
FN1F4M-T1B
RSTL
R76
C75
D11
VMH
ICONT2
ICONT1
V16
V16
R29
3K
JP15
Q11
FB1A4M-T1B
To V878-DR sub ass'y
CN15
VRIV1
VRIV2
VRLCD1
VRLCD2
B4B-PH-K-S
IC17
PQ12RF21
C57
R74
V12
JP16
0
JP14
0
VIM
25V47u
C55
R73
C56
16V47u

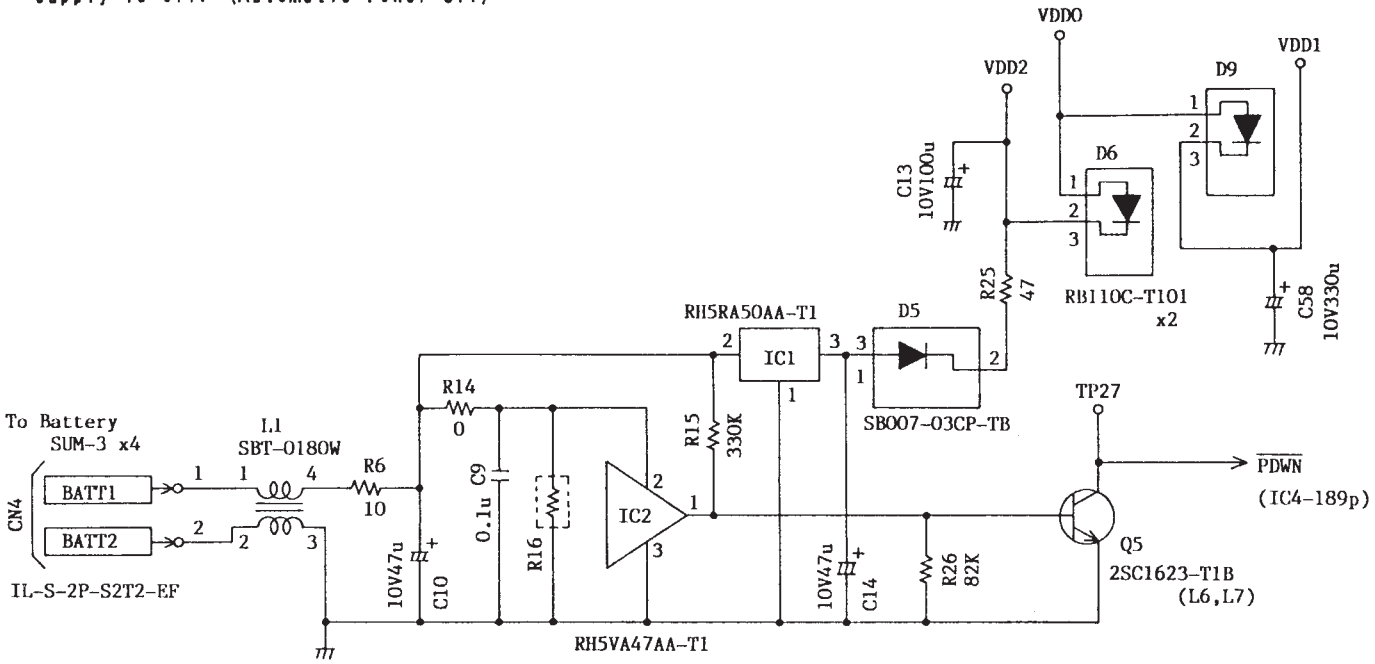
The voltage VH is for Printer Head, and this voltage is adjusted by Volume VR1 and VR2.
VR1 is for customers, and VR2 is adjusted as basic voltage depend on Printer Head Rank1 ~ 6.
When the PIN1 is shorted, the voltage VH downs about +7V.

The terminal VCOM is connected Volume VR3 and contrast Volume for customers.
When the contrast Volume is minimum position, the voltage VLCD is adjusted -19.6V by VR3.
Actually the VLCD is adjusted +24.6V between the terminal VCOM and VDD0.

The voltage VIV is adjusted the bright Volume for the back light in customers side.

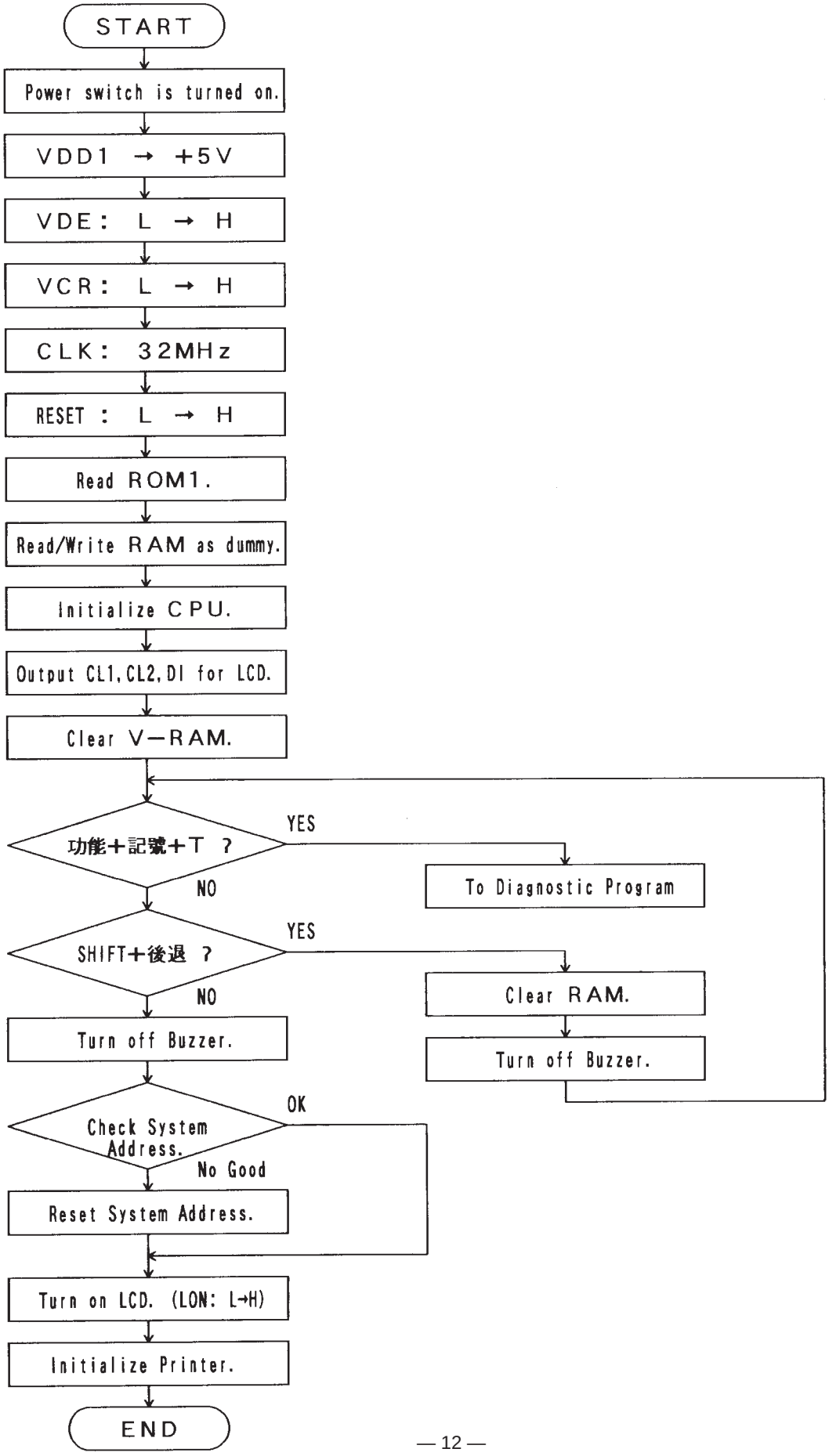


M51958BFP-T2 (IC3) is the voltage detector, and finds out the low battery for the voltage VMH.
If the voltage VMH becomes from +14.83V to 12.73V, CPU detects the low battery condition and the power supply is off. (Automatic Power Off)



Four pieces of batteries SUM-3 supply the memory back-up voltage VDD2.
When the power switch is off, the voltage VDD2 is supplied from the voltage regulator RH5RA50AA-T1 (IC1) through the batteries SUM-3. When the power switch is on, the VDD2 is supplied from VDD0.
If the voltage of the batteries becomes from +4.818V to +4.58V, the voltage detector RH5VA47AA-T1 detects the low battery condition, and the signal PDWN goes to CPU. Then the display shows Low Battery Message.

4—4 FLOW CHART FOR CIRCUIT



5 CHECK ITEMS

5-1 HOW TO ADJUST VOLUME

5-1-1 VOLUME VR2

Name	Position for measure		Volume	Rank for Printer Head					
	(+) Terminal	(-) Terminal		1	2	3	4	5	6
VH	CN1 Pin No. 6	CN1 Pin No. 9	VR2	+46.0V	+45.1V	+44.1V	+43.1V	+42.1V	+41.1V

1) Remove the cable for Printer Head from the connector CN6.

2) Turn the volume VR1 (for customers) to dark position.

3) Adjust the volume VR2 in response to Head Rank as shown above table.
   Note; Rank number is printed on the cable for Printer Head.

4) Set the cable for Printer Head to the connector CN6.

5-1-2 VOLUME VR3

Name	Position for measure		Volume	Set up voltage value
	(+) Terminal	(-) Terminal		
VLCD	CN1 Pin No. 8	CN1 Pin No. 13	VR3	+24.6V±0.1V

1) Turn the contrast volume (for customers) to light position.

2) Adjust the volume VR3 as shown above table.

5-2 POWER CONSUMPTIONS

Mode No.	Action
1	Waiting for pressing the keys.
2	Printing (100% Duty)
3	Working FDD (Floppy Disk Drive)
4	Woring ASF (Auto Sheet Feeder)

AC: 220V 50Hz

Mode	Output power (Watt)			Input power (Watt)			Input (A)
	Typical	Maximum	Survey	Typical	Maximum	Survey	Survey
1	8.3676	12.248	7.7502	4.3	22.1	13.3	0.6
2	19.389	41.734	34.135	29.0	65.8	51.2	2.4
3	9.9147	15.488	8.9112	17.5	28.9	15.8	0.72
4	17.060	23.110	16.400	26.0	37.0	25.0	1.18

6 DIAGNOSTIC OPERATION

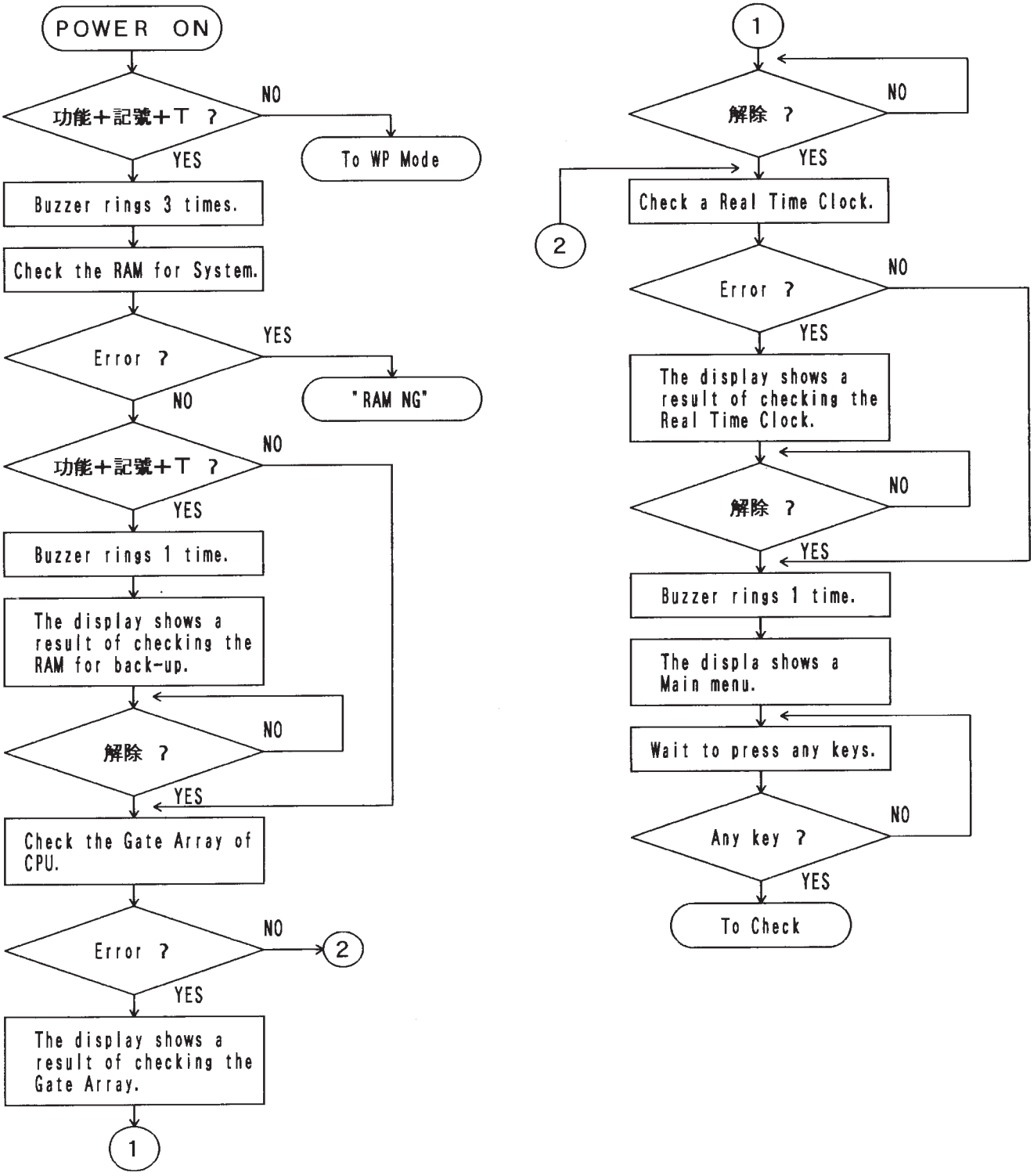
6-1 PREPARATIONS

Please prepare the following items.
a) Ink ribbon cassette b) Paper c) Floppy disk sheet (initialized) (d) RS-232C Conector)

Before the diagnostic program is executed, please set the ribbon cassette and paper.

If the text data or other data are stored to the memory of CW-8800, please save the data to the floppy disk sheet at first.

6-2 FLOW CHART FOR DIAGNOSTIC



6－3 HOW TO START THE DIAGNOSTIC

1) Turn the power switch OFF.

2) Press the [功能], [記號], and [T] keys at the same time, then turn the power switch ON.

3) The display shows the Main menu as follows:

```
                VX－862 Ver.1.0
(A) RAM
(B) ROM
(C) OPTION
(D) LCD E
(E) LCD
(EXE) WIRE
(G) PRINTER
(H) PRINTER KENSA
                    FWRTDH01
(I) FDD STS
(J) FDD RD
(K) FDD WR
(L) FDD WIRE
(M) FDD KENSA
(N) LOOP          NORMAL
(O) KEY
(P) BACK UP
(Q) TRAIN
(R) PORT
                                    00:00:35
```

6－4 CHECK PROCEDURES

6－4－1 CHECK FOR RAM

1) How to execute: Press [A] key.

2) Check matters : Check the Main RAM and Video RAM.

3) Normal end : [(A) RAM 1:OK 2:OK 3:OK VRAM0:OK]

4) Error : [(A) RAM 1:NG 2:NG 3:NG VRAM0:NG]

6－4－2 CHECK FOR ROM

1) How to execute: Press [B] key.

2) Check matters : The display shows the Check SUM and XOR, and check these values.

3) Normal end : [(B) ROM □□□□ OK □□□□ OK □□□□ OK □□□□ OK
□□ □□ □□ □□]

4) Error : [(B) ROM □□□□ NG □□□□ NG □□□□ NG □□□□ NG
□□ □□ □□ □□]

6－4－3 CHECK FOR OPTIONS

1) How to execute: Press [C] key.

2) Check matters : The display shows the Option menu, and check the options. (Go to 6－4－19)

3) Normal end : Press [功能] and [C] keys at the same time, and return the Main menu.

6－4－4 CHECK FOR LCD E

1) How to execute: Press [D] key.

2) Check matters : The display shows "E" characters at all.

When you press any key, the display shows a square line as follows:

3) Normal end : When you press any key, the display returns the Main menu.

6－4－5 CHECK FOR LCD

1) How to execute: Press [E] key.

2) Check matters : ① The display shows a square line.
② When you press any key, the display shows the check patterns at all.
③ When you press any key, the display shows reverse pattern ②.
④ When you press any key, the display shows all dots.

3) Normal end : When you press any key, the display returns the Main menu.

6－4－6 CHECK FOR WIRE

1) How to execute: Press [F] key.

2) Check matters : The display shows the PCB check menu, and check the PCB. (Not used.)

3) Normal end : Press [功能] and [C] keys at the same time, and return the Main menu.

6－4－7 CHECK FOR PRINTER

1) How to execute: Press [G] key.

2) Check matters : The printer unit prints the following pattern, and the display shows a result.

3) Normal end : (G) PRINTER OK

4) Error : (G) PRINTER NG

6－4－8 CHECK FOR PRINTER KENSA

1) How to execute: Press [H] key.

2) Check matters : The display shows the Printer check menu, and check the printer. (Go to 6－4－20)

3) Normal end : Press [功能] and [C] keys at the same time, and return the Main menu.

6－4－9 CHECK FOR FDD STS

1) How to execute: Press [I] key.

2) Check matters : Set the floppy disk sheet with unprotected for writing to FDD, then press [I] key.
Remove the floppy disk sheet from FDD, then press any key.
Set the floppy disk sheet with protected for writing to FDD, then press any key.

3) Normal end :
```
                    FWRTDH10
(I) FDD STS   OK    01110000
```

4) Error :
```
(I) FDD STS   NG
```

5) Note : "FWRTDH10" means following status.

F: Fault	D: Disk changed
W: Write protected	H: Head
R: Ready	1: Unit selected 1
T: Track0	0: Unit selected 0

6−4−10 CHECK FOR FDD RD

1) How to execute: Press [J] key.

2) Check matters : Set the floppy disk sheet which is writed by "FDD WR", then press [J] key.

3) Normal end :
```
(J) FDD RD   OK
```

4) Error :
```
(J) FDD RD  □□  □□□□  □□ □□ □□  NG  □□□□
```

5) Note : Error code, Error name, Error Identification, Error position

6−4−11 CHECK FOR FDD WR

1) How to execute: Press [K] key.

2) Check matters : Set the floppy disk sheet which is initialized, then press [K] key.

3) Normal end :
```
(J) FDD WR   OK
```

4) Error :
```
(J) FDD WR  □□  □□□□  □□ □□ □□  NG  □□□□
```

6−4−12 CHECK FOR FDD WIRE

1) How to execute: Press [L] key.

2) Check matters : Check the wiring for FDD by using the exclusive tool. (Not used.)

6−4−13 CHECK FOR FDD KENSA

1) How to execute: Press [M] key.

2) Check matters : The display shows the FDD check menu, and check the FDD. (Go to 6−4−21)

3) Normal end : Press [功能] and [C] keys at the same time, and return the Main menu.

6−4−14 LOOP

1) How to execute: Press [N] key.

2) Check matters : In case of "NORMAL", the display shows "LOOP" when you press [N] key, and each check is continued until you press [解除] key.

6−4−15 CHECK FOR KEY

1) How to execute: Press [O] key.

2) Check matters : After you press [O] key, you can check all keys as character or code number if you select "B" or "C".
```
(A) KO-KI
(B) CHARACTER
(C) NUMBER
```

3) Normal end : Press [解除] key, then return the Main menu.

4) Note : When you select "A", you can check the key signals KO and KI.

6－4－16 CHECK FOR BACK UP

1) How to execute: Press [P] key.

2) Check matters : After you press [P] key, the display shows following message.

```
(P) BACK UP   END
```

Then the power switch is turned off.

After that, continue pressing [功能] , [記號] , and [T] keys until a result of following.

3) Normal end :
```
  RAM  1:OK 2:OK 3:OK
```

4) Error :
```
  RAM  1:NG 2:NG 3:NG
```

6－4－17 TRAIN

1) How to execute: Press [Q] key.

2) Check matters : Check the following check items automatically.

RAM, ROM, RS232C, CHK INDEX, FDD RD, FDD WR, PRINTER, FDD STS, LCD, BACK UP

3) Note : When the program is stopped in case of error, press [SHIFT] and [Q] keys at the same time.

6－4－18 CHECK FOR PORT

1) How to execute: Press [R] key.

2) Check matters : Check the status of each devices as follows:

```
(R) PORT   RIBBON-0/1 PAPER-0/1 DET-0/1 PWDN-0/1 ASFI-0/1
```

3) Note :

RIBBON	0; used Ribbon cassette	1; not used Ribbon cassette
PAPER	0; used Paper	1; not used Paper
DET	0; connected Image senser	1; not connected Image senser
PWDN	0; not detected Power down	1; detected Power down
ASFI	0; connected ASF	1; not connected ASF

6－4－19 OPTION MENU

```
              VX-862  Ver. 1.0
(A) IMAGE READER
(B) MODEM
(C) RS232C
(D) PEN
(E) 3PIN TRANSFER
(F) 3PIN RECEIVE
(G) MODEM 2400

(I) BZ




(N) LOOP            NORMAL



                                                    00:00:35
```

(A) IMAGE READER : ① Press [A] key, and the display clears.
② After that, press any key, and read the data from Image senser unit.
③ When the buzzer rings, you finish reading the data.
④ When you press [功能] and [H] at the same time, the data are printed.
⑤ Press [解除] key, and return the Option menu.

(B) MODEM : ① Connect the MODEM to the serial interface. (Not used.)

(C) RS232C : ① Connect the loop back connector to the serial interface.
② Press [C] key.

(D) PEN : ① Connect the pen writer. (Not used.)

(E) 3PIN TRANSFER: ① Not used.

(F) 3PIN RECEIVE : ① Not used.

(G) MODEM 2400 : ① Connect the MODEM to the serial interface. (Not used.)

(I) BZ : ① Press [I] key.
② Until you press [解除] key, the buzzer continues ringing.

6－4－20 PRINTER MENU

```
                VX－862 Ver.1.0
(A)   0%
(B)  25%
(C)  33%
(D)  50%
(E)  75%
(F) 100%
(G)    H

(I) POSTCARD
(J) POSTCARD V
(K) KEISEN
(L) FEED
(M) SPEED          HIGH

(N) LOOP           NORMAL




                                        00:00:35
```

(A) 0% : ① Press [A] key.
② The printer prints with 0% duty.

(B) 25% : ① Press [B] key.
② The printer prints with 25% duty.

(C) 33% : ① Press [C] key.
② The printer prints with 33% duty.

(D) 50% : ① Press [D] key.
② The printer prints with 50% duty.

(E) 75% : ① Press [E] key.
② The printer prints with 75% duty.

(F) 100% : ① Press [F] key.
② The printer prints with 100% duty.

(G) H : ① Press [G] key.
② The display shows "H" character at all.
③ Press any key, then the printer unit prints "H" on the paper of B4 type.

(I) POSTCARD : ① Press [I] key.
② The display shows "H" character at all.
③ Press any key, then the printer unit prints "H" to a postcard horizontally.

(J) POSTCARD V : ① Press [J] key.
② The display shows "H" character at all.
③ Press any key, then the printer unit prints "H" to a postcard vertically.

(K) KEISEN : ① Press [K] key.
② The printer units print a vertical line on the right and left terminals of B4 type with the tape saving mode and un-saving mode mutually.
③ Press [解除] key, and return the Printer menu.

(L) FEED : ① Press [L] key.
② The printer unit feeds one line.

(M) SPEED : ① Press [M] key.
② You can select the speed for printing as follows:
HIGH : High speed printing
THERMAL: High speed printing on the thermal paper
LOW : High grade printing
LOW RO : High grade printing on the wax paper

6−4−21 FDD MENU

```
                VX−862 Ver. 1.0
(A) FDD FORMAT
(B) FDD SUM
                  TR H DATA
(C) FMT
(D) WR
(E) RD
(F) CE
(G) FDD RETRY     19
(H) FDD READ
(I) FDD WRITE
(J) FDD SELECT    SEC/TR  8



(N) LOOP          NORMAL



                                              00:00:35
```

(A) FDD FORMAT : ① Press [A] key.
② The floppy disk sheet is initialized.

(B) FDD SUM : ① Press [B] key.
② The floppy disk sheet is checked, and the display shows the values of CHECK SUM and XOR.

(C) FMT : ① Press [C] key.
② One track of the floppy disk sheet is initialized under the values which you entered the track and head number.

(D) WR : ① Press [D] key.
② One track of the floppy disk sheet is writed under the values which you entered the track, head number, and data.

(E) RD : ① Press [E] key.
② One track of the floppy disk sheet is read under the values which you entered the track and head number, and compares the read data with the values you entered.

(F) CE : ① Press [F] key.
② The head is moved the track number which you entered, and continued reading until you press [解除] key.

(G) FDD RETRY : ① Press [G] key.
② You can enter the retry count with decimal, if the FDD happens error.

(H) FDD READ : ① Press [H] key.
② The floppy disk sheet is read from track number 0, 1, 78, and 79.

(I) FDD WRITE : ① Press [I] key.
② The floppy disk sheet is writed to track number 0, 1, 78, and 79 with the data which you entered with hexadecimal.

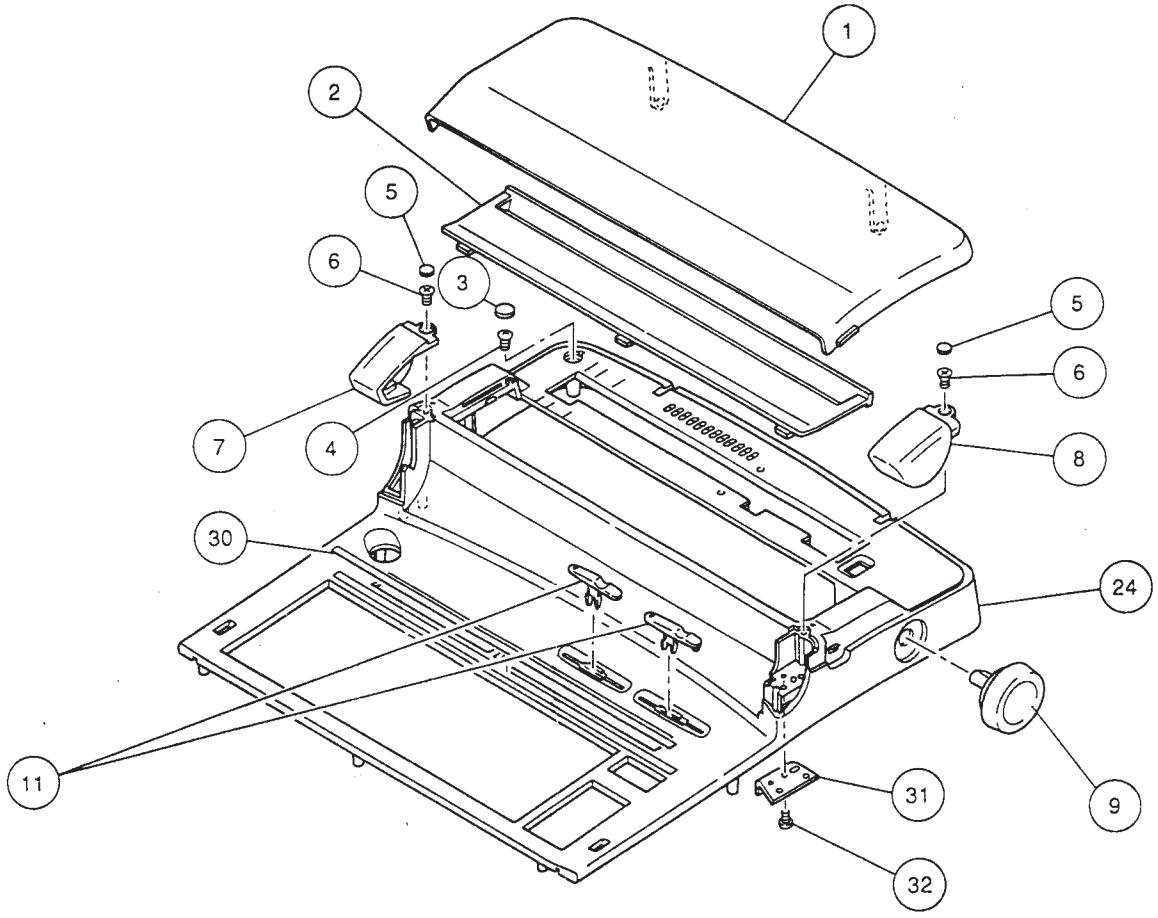
(J) FDD SELECT : ① Press [J] key.
② You can select the sector quantities 8 or 9 per one track.

7 DISASSEMBLY

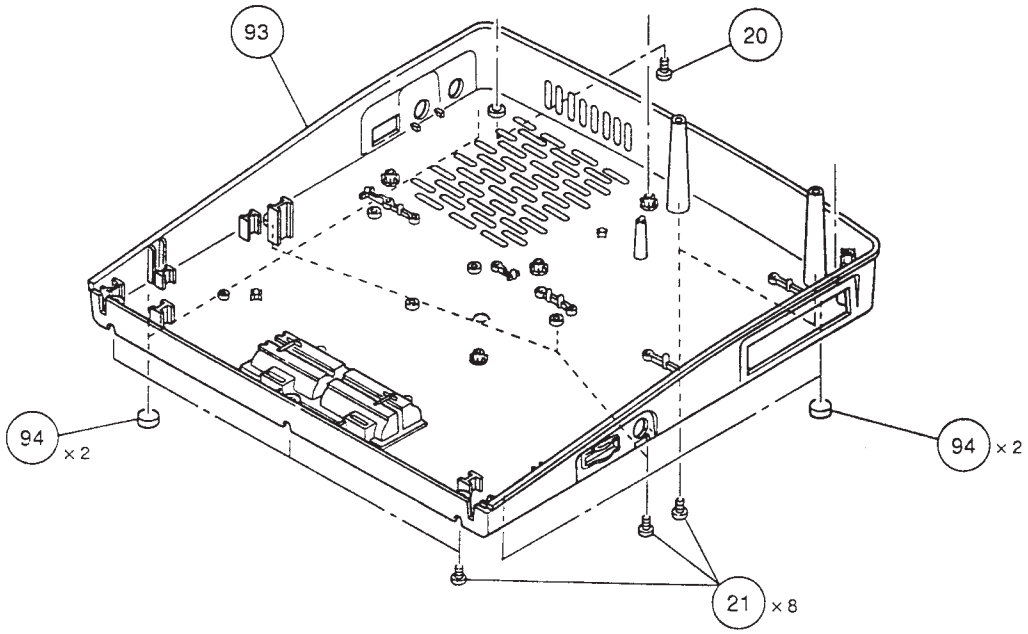
7-1 COMPONENT

1) Remove Printer cover(1) , Paper guide(2) , and Printer knob(9) .

2) Remove Blind tape(3) , then release Bind screw(4) .



3) Release one Bind screw (20) and eight Tapping screws (21) on the Lower case ass'y.



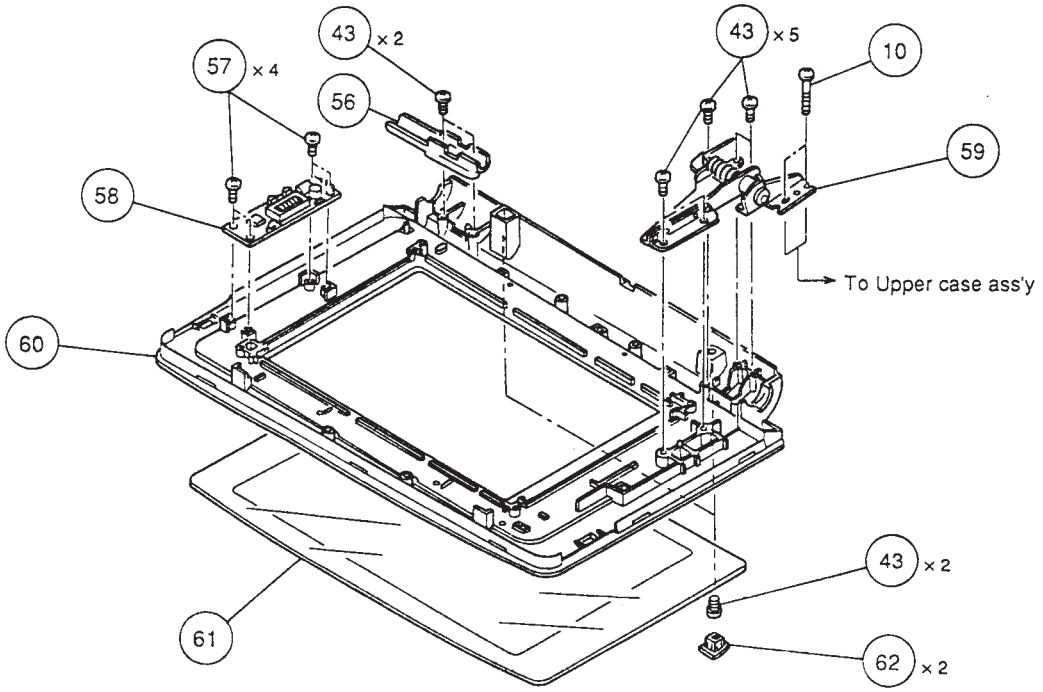
4) Remove the Upper case ass'y with the Display case ass'y from the Lower case ass'y.

5) Remove the cable of the Display ass'y from the Connecter CN11 of V862-1 ass'y (89).

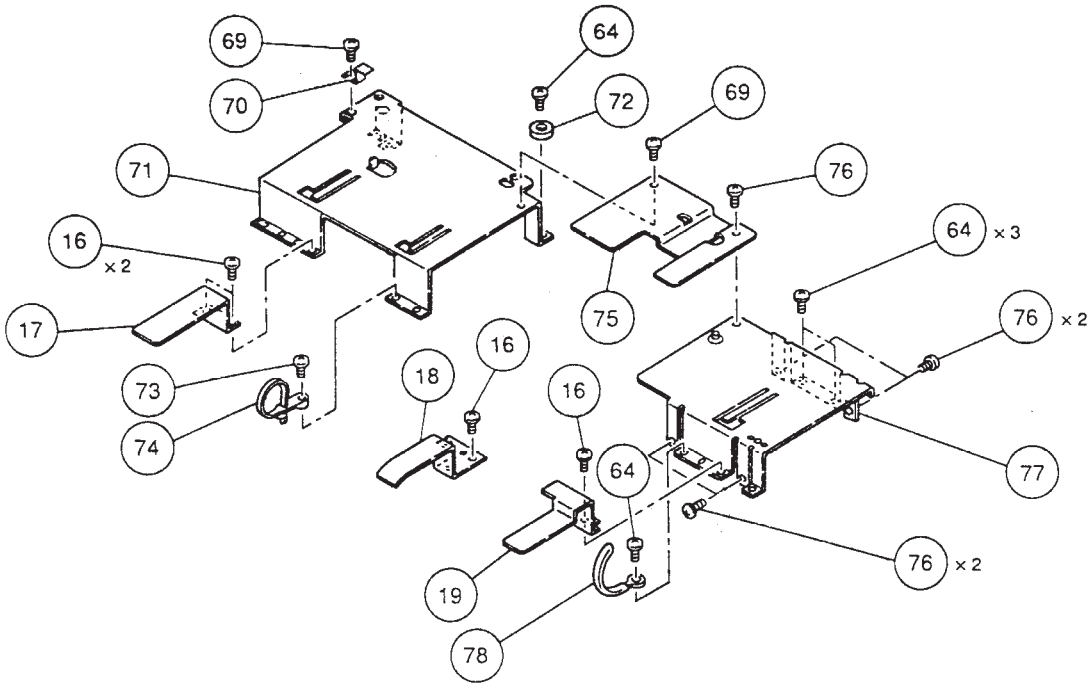
6) Remove two Blind tapes(5), then release two Tapping screws(6).

7) Open the Display, and remove two Blind cases(7), (8).

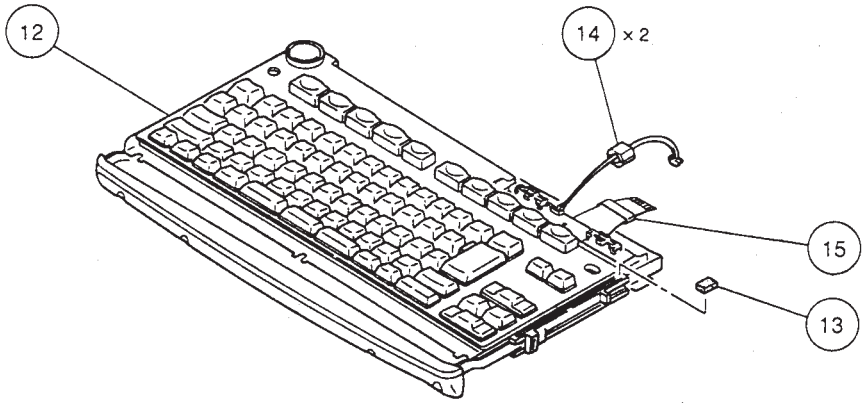
8) Release two Tapping bind screws (10).



9) Release four Screws (16), and remove Earth plates (17), (18), (19).



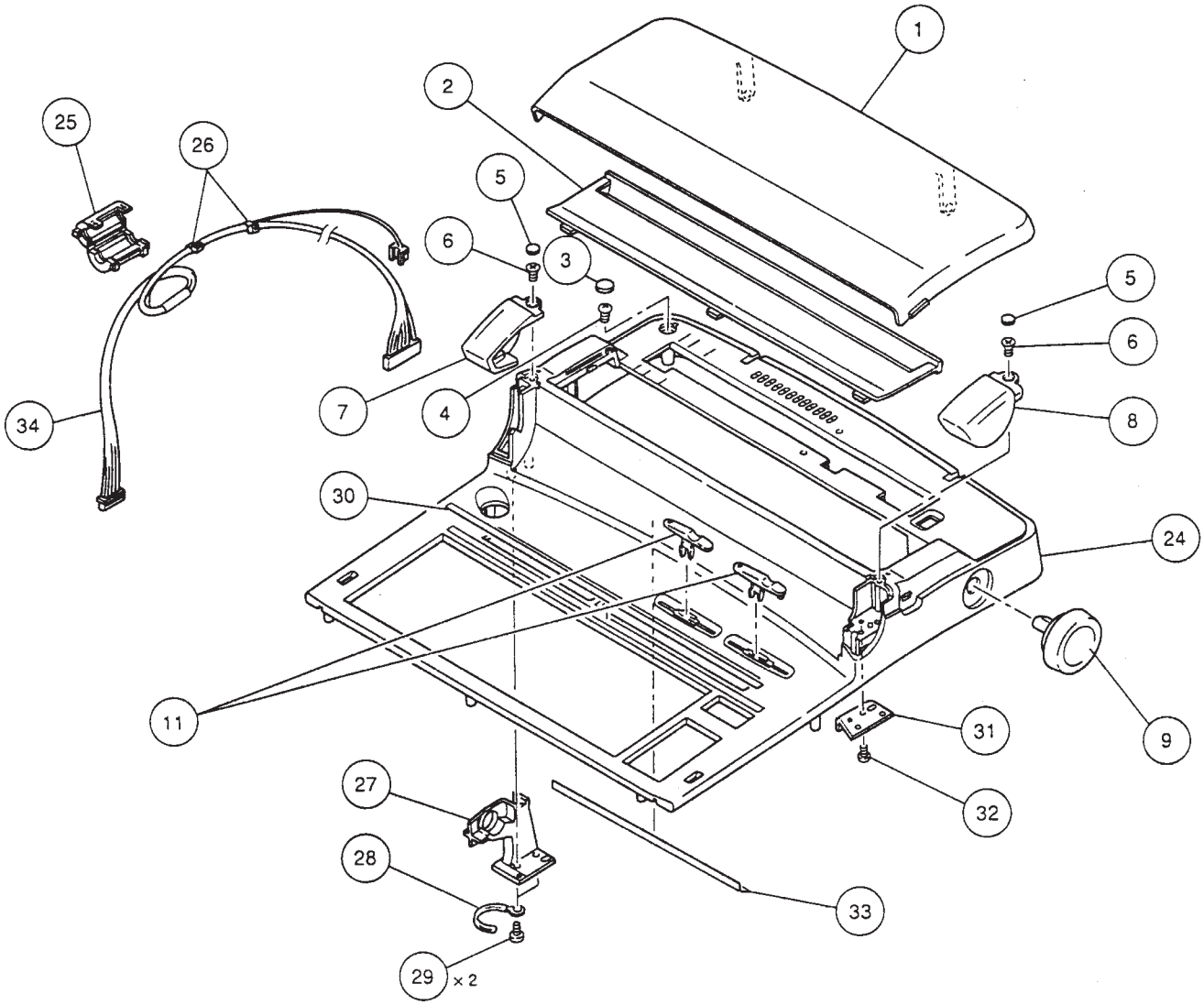
10) Remove two cables of Keyboard sub ass'y ⑫ from Connecter CN3 and CN15 of V862-1 ass'y ⑧⑨.



7-2 UPPER CASE ASS'Y

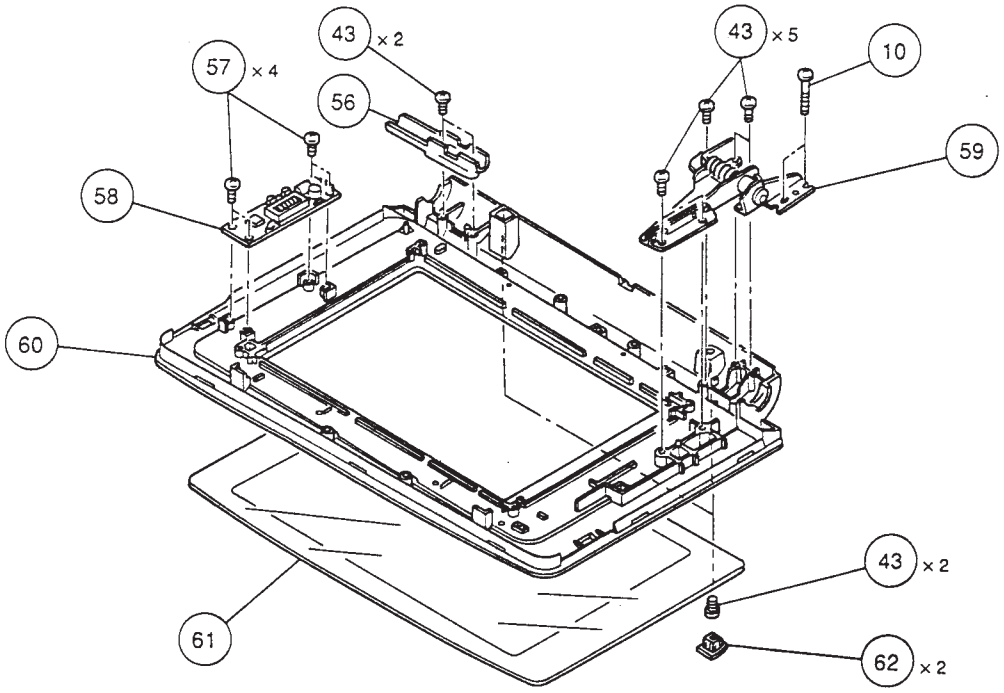
1) Remove Ferrite core ㉕.

2) Remove the Display case ass'y from the Upper case ass'y.

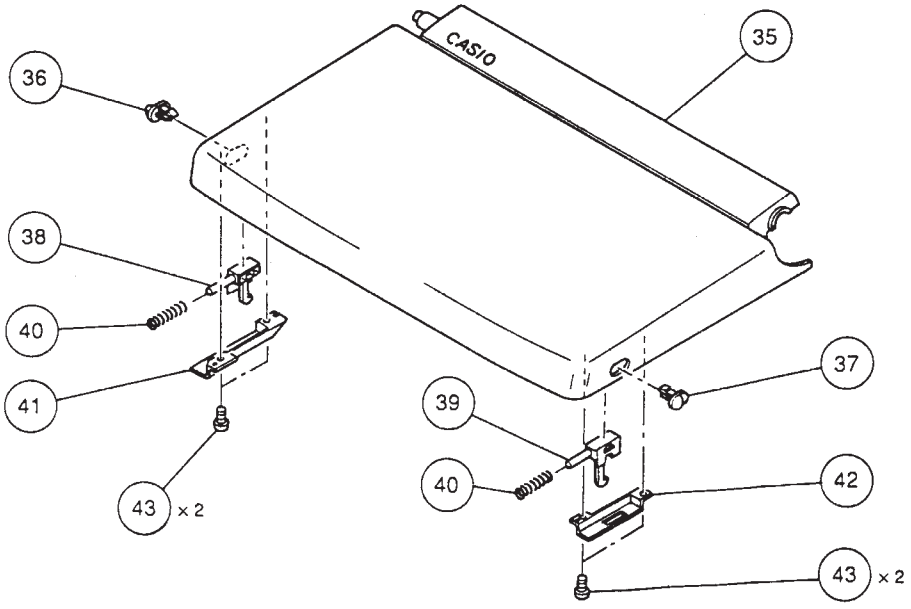


7-3 DISPLAY CASE ASS'Y

1) Remove two Blinds (62), then release two Screws (43).



2) Remove seven hooks of Display lower case (35), and remove Display lower case (35).



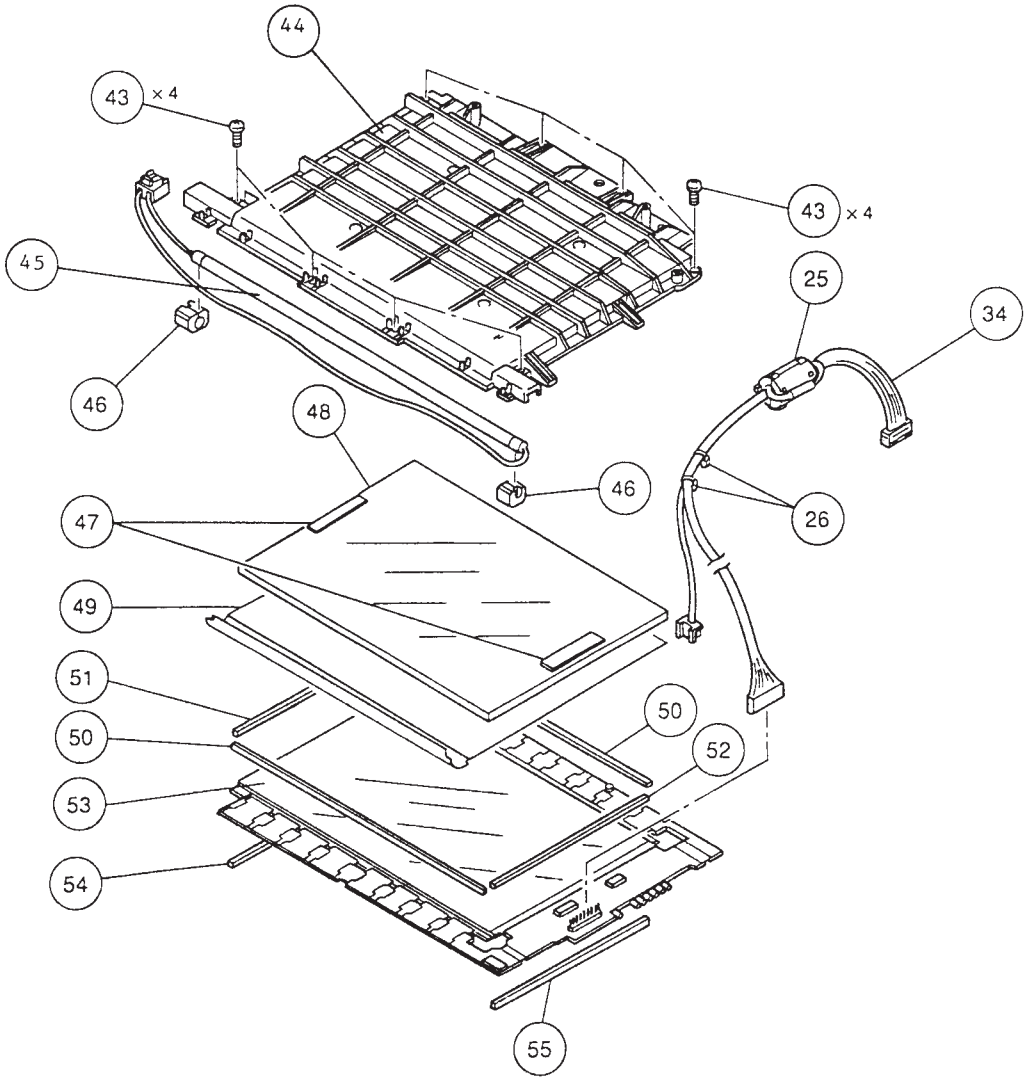
3) Remove two connecters of Inverter unit (58).

4) Release four Tapping bind screws (57), and remove Inverter unit (58).

5) Release eight Screws (43).

6) Remove LCD cover (44), Cold cathode tube (45), Light guide plate (48), and Reflection sheet (49).

7) Remove LCD unit (53). (Note: Do not touch LCD and LSI.)

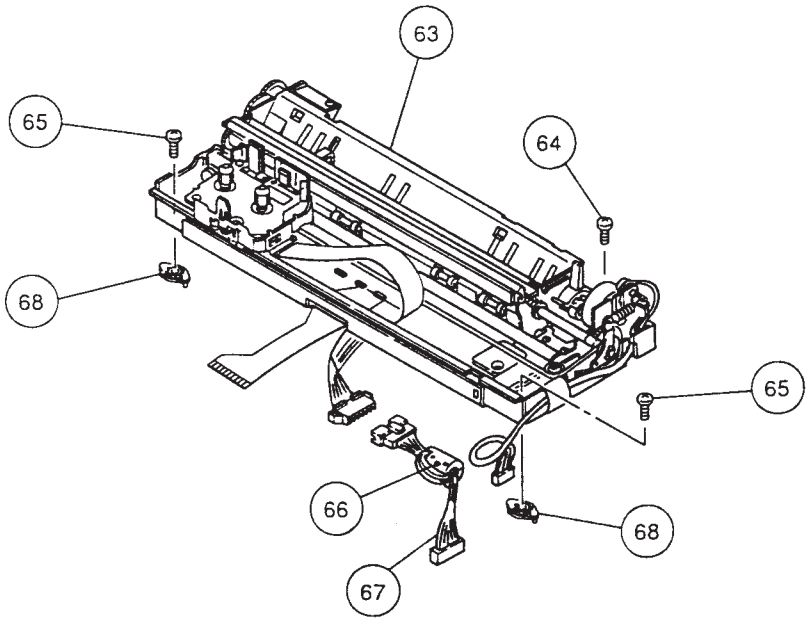


7-4 LOWER CASE ASS' Y

1) Remove three cables of Printer (63) from Connecter CN6, CN9, and CN10 of V862-1 ass'y (89).
(Note: Do not touch the terminal of the cable from CN6.)

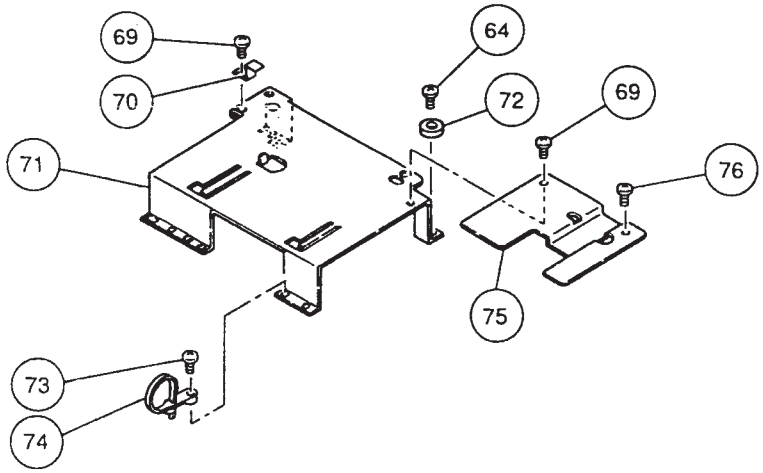
2) Release one Screw (64) and two Bind screws (65), and remove Printer (63).

3) Remove two Printer collars (68).



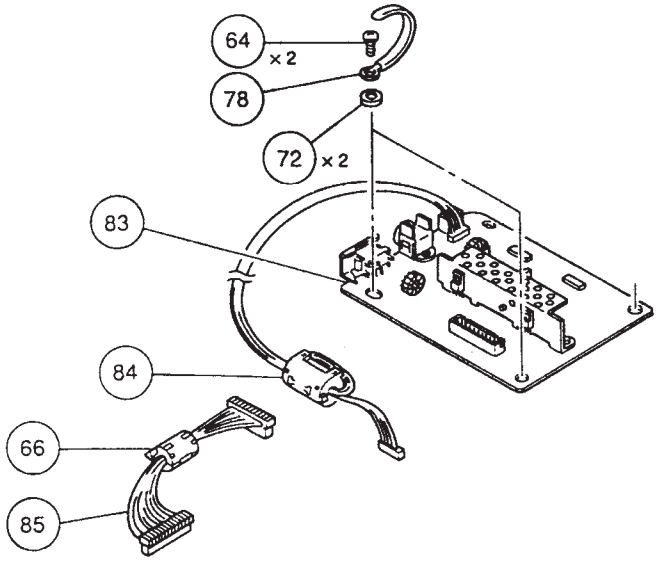
4) Release one Screw (64), one Bind screw (69), and one Tapping bind screw (73).

5) Remove Printer fixing plate (71).

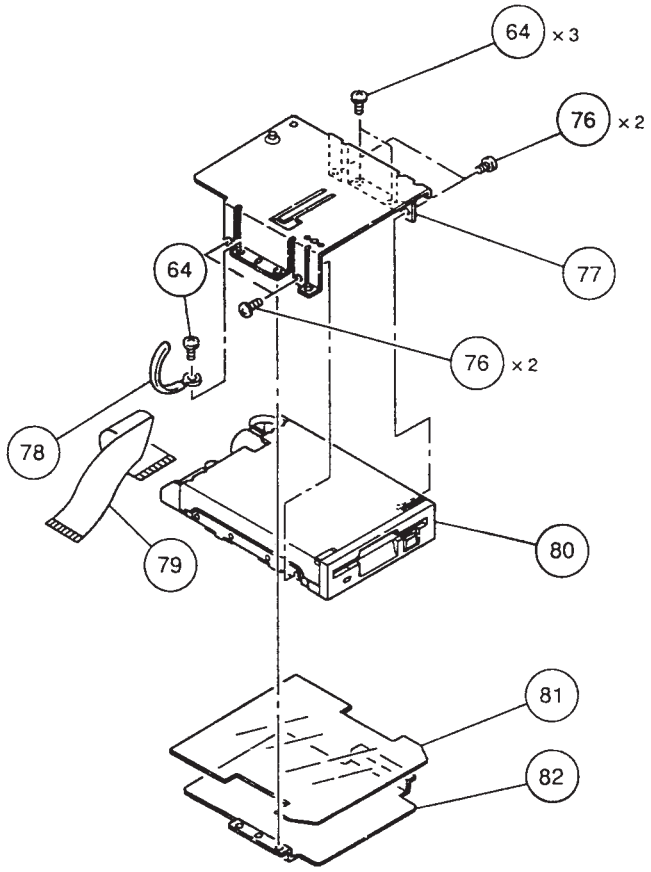


6) Remove two cables of Power supply unit (83) from Connecter CN1 and CN2 of V862-1 ass'y (89).

7) Release two Screws (64), and remove Power supply unit (83).

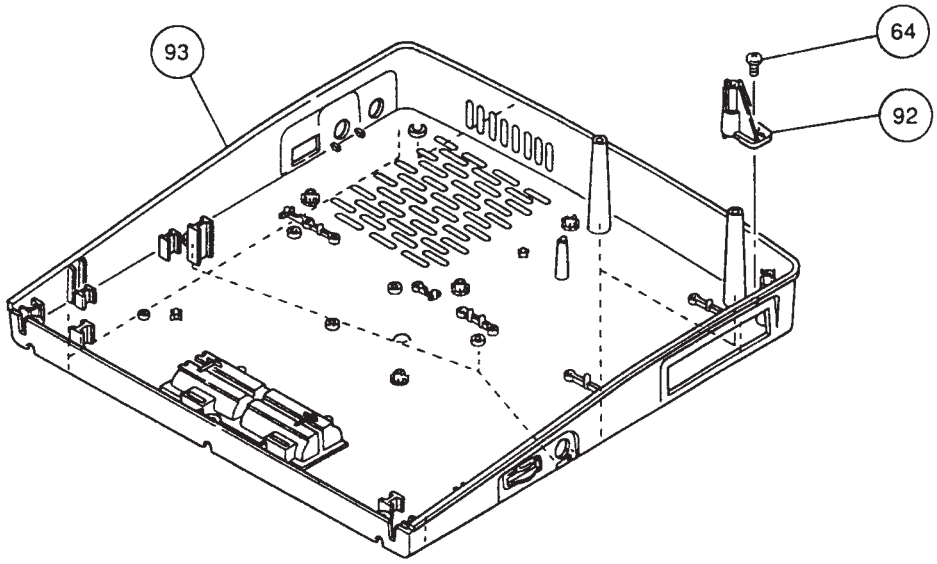


8) Remove the cable of FDD (80) from Connecter CN5 of V862-1 ass'y (89).

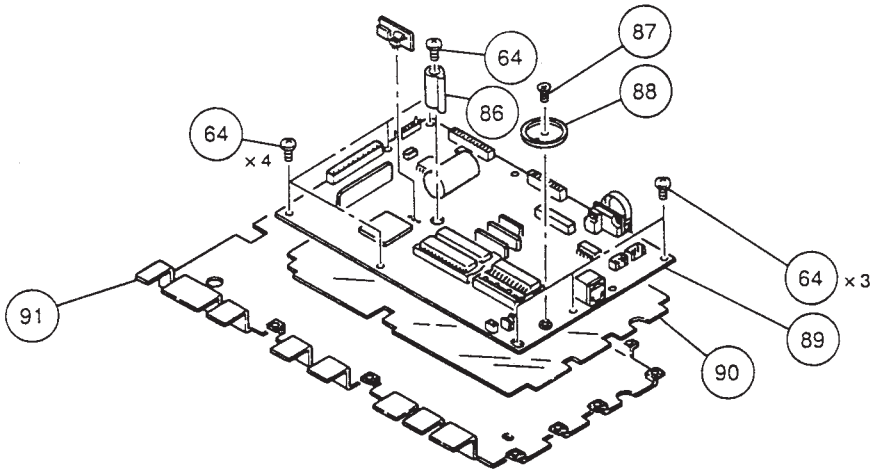


9) Release Screw (64), and remove Printer collar (92).

10) Release four Screws (64), and remove FDD (80).

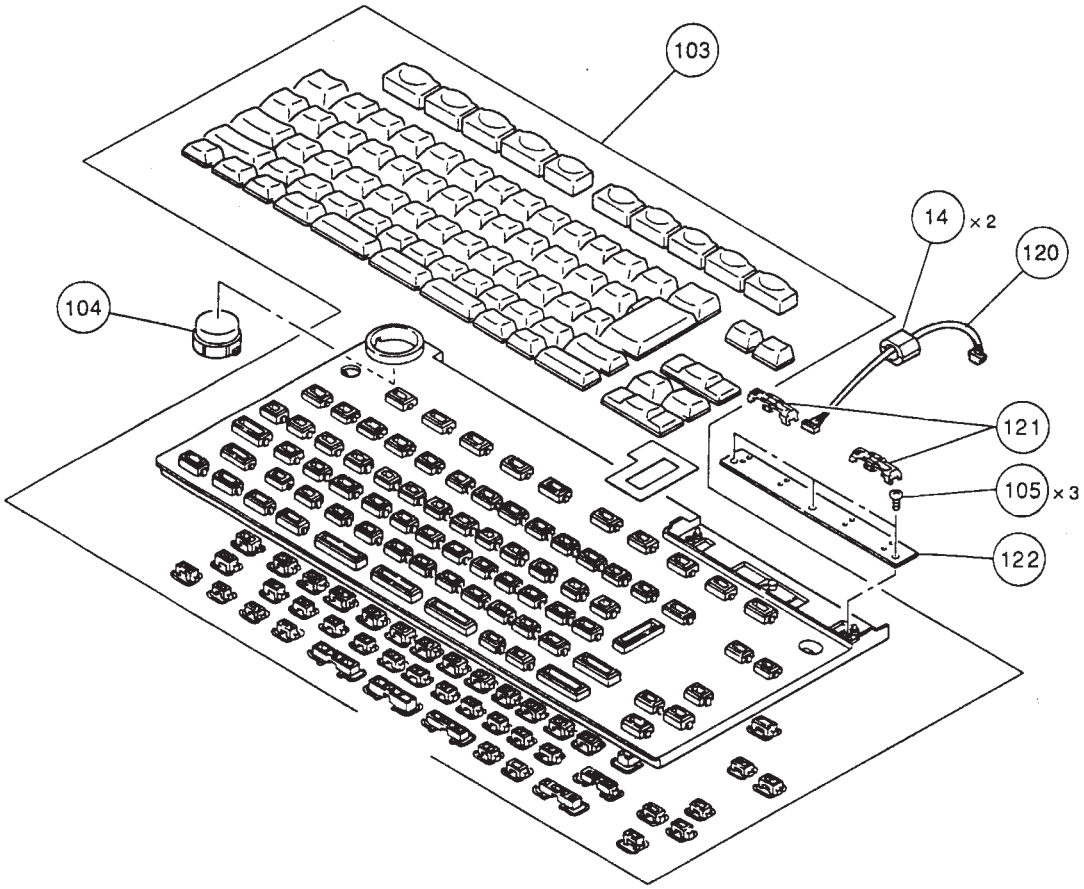


11) Release eight Screws (64), and remove V862-1 ass'y (89).

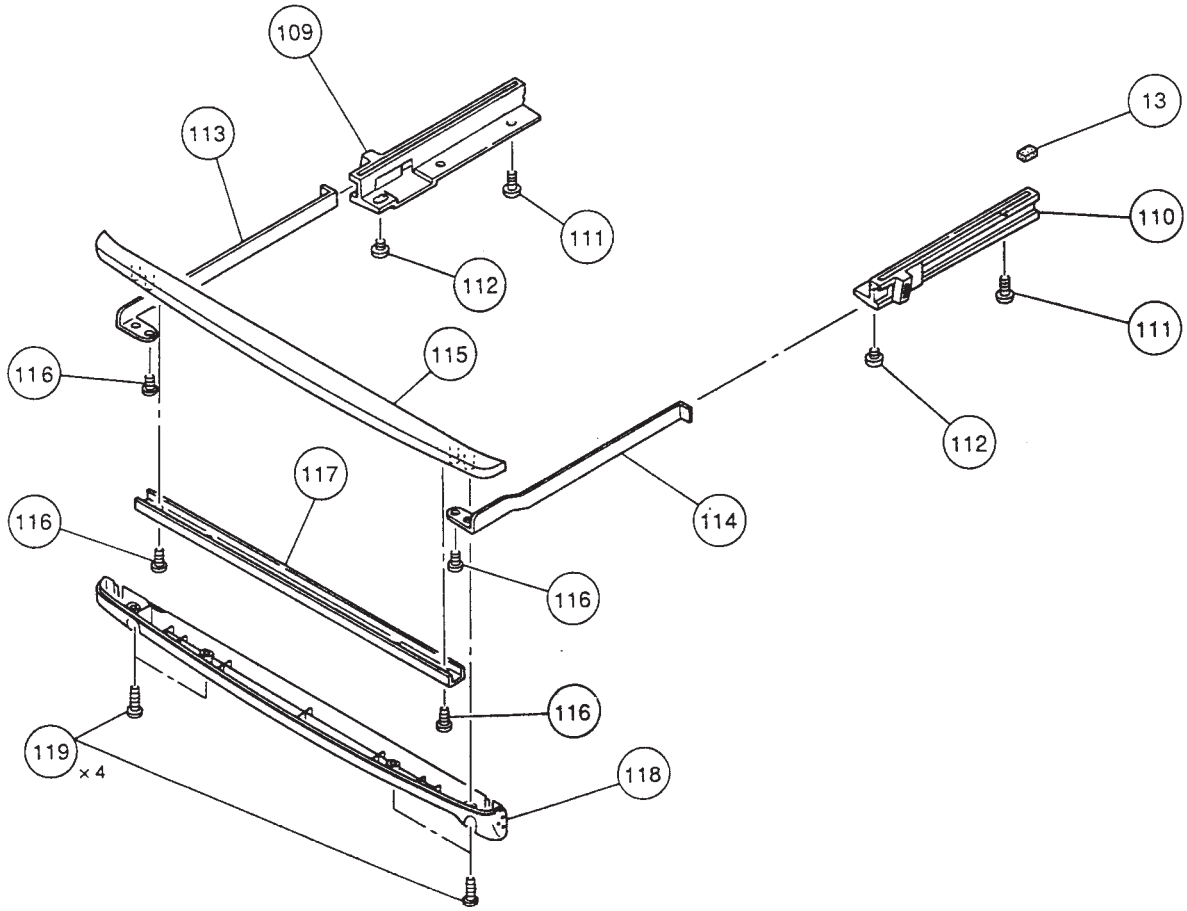


7-5 KEYBOARD SUB ASS'Y

1) Release three Tapping bind screws (105), and remove the V878-DR sub ass'y.

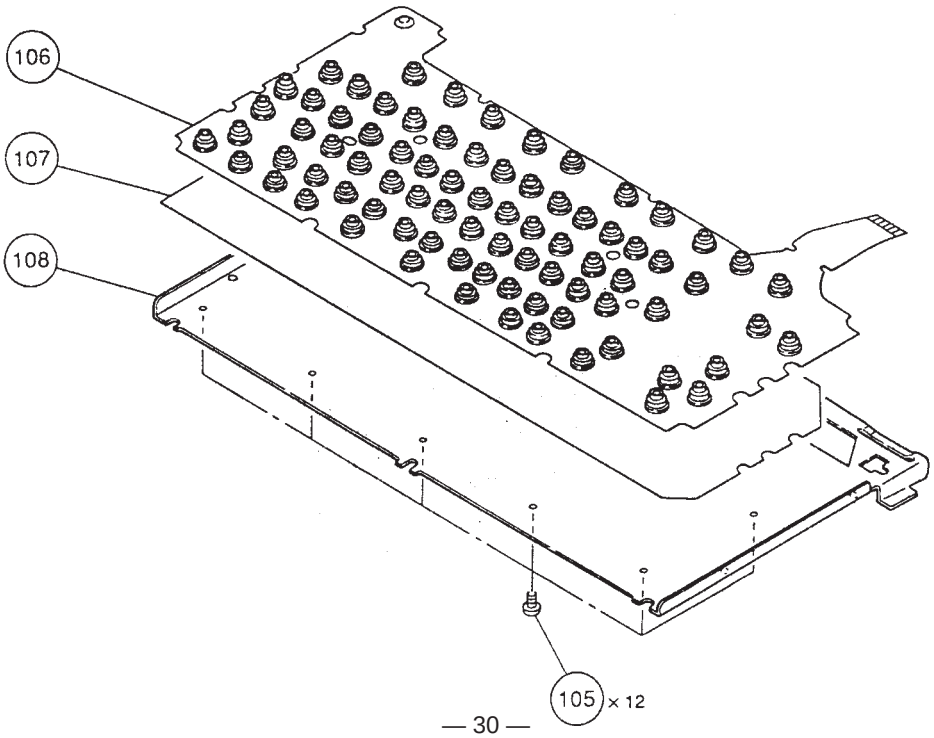


2) Release two Screws (111) and two Bind screws (112), and remove the Handle.



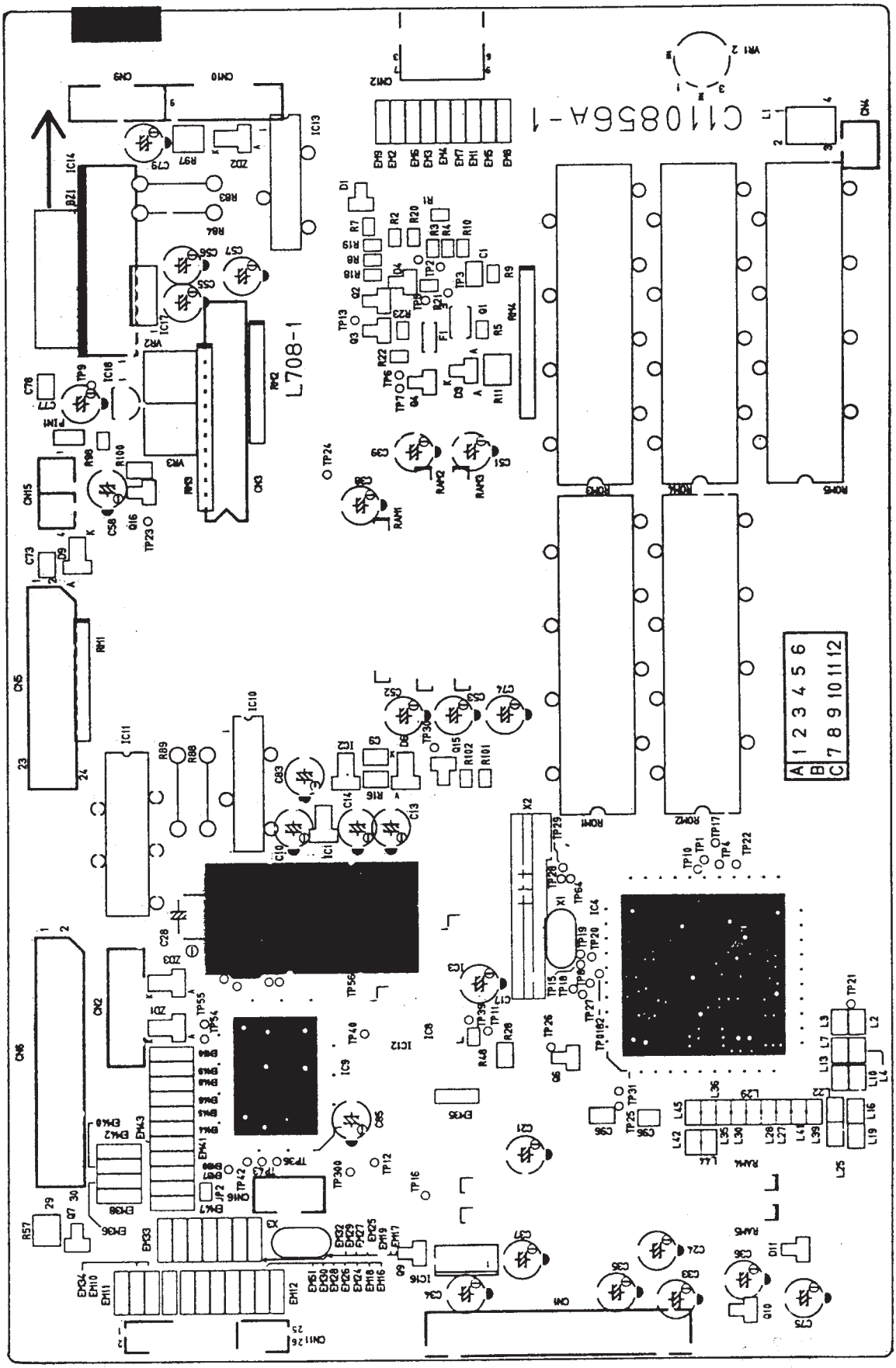
3) Release twelve Tapping bind screws (105).

4) Remove Keyboard plate (108), Keyboard spacer (107), and TAC film sub ass'y (106).

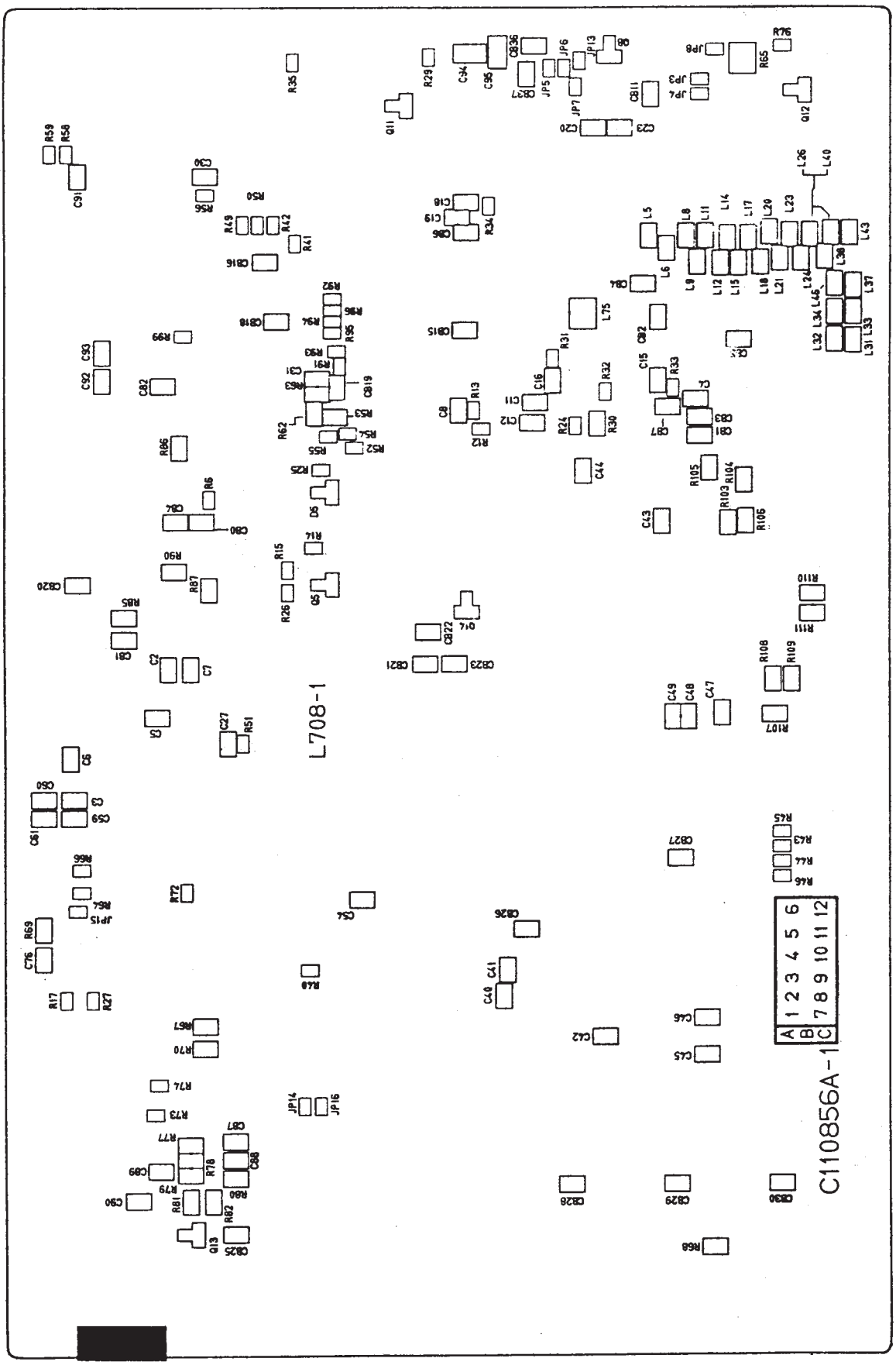


8 PCB VIEW

8-1 PARTS SIDE

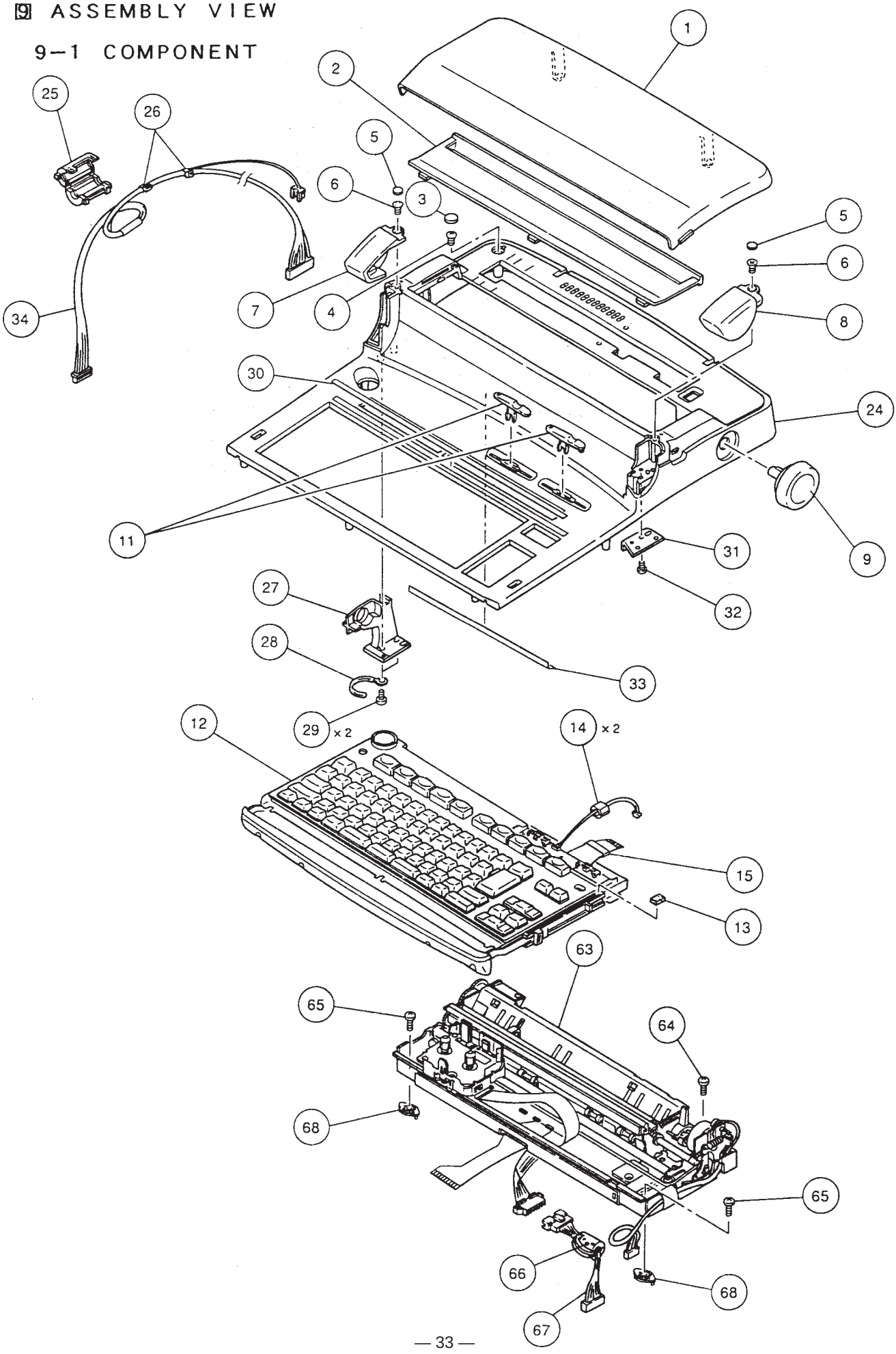


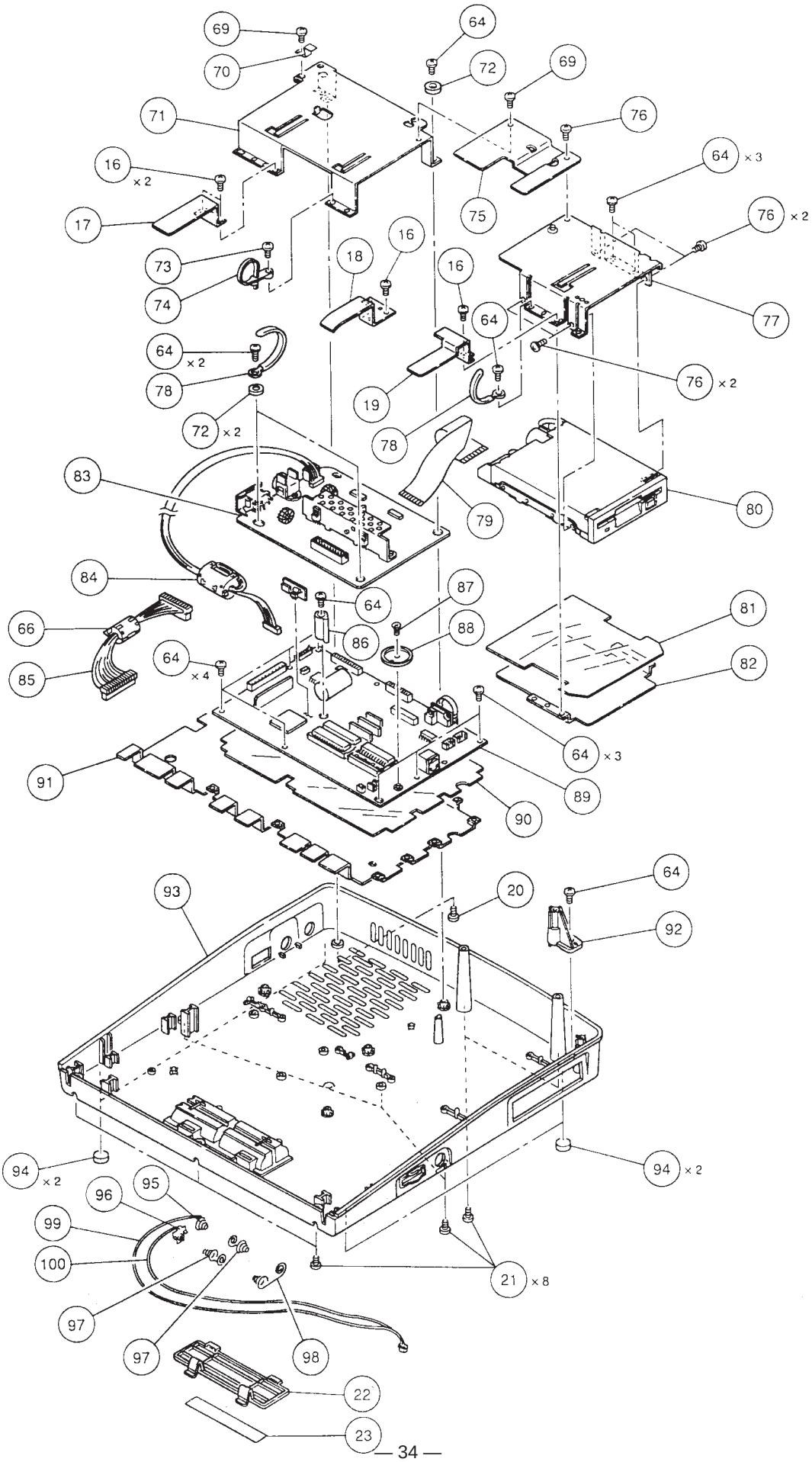
8-2 OPPOSITE SIDE



9 ASSEMBLY VIEW

9-1 COMPONENT

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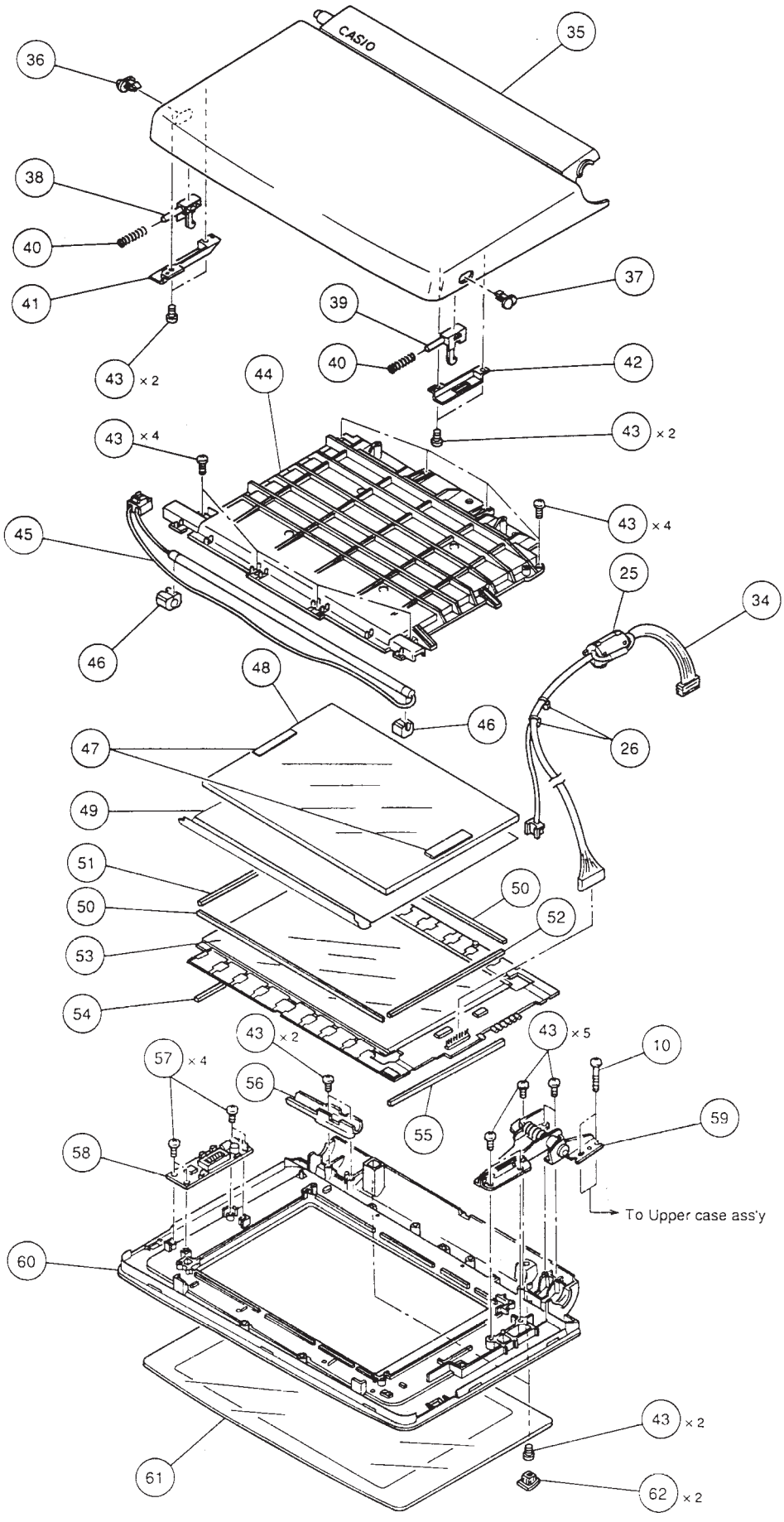
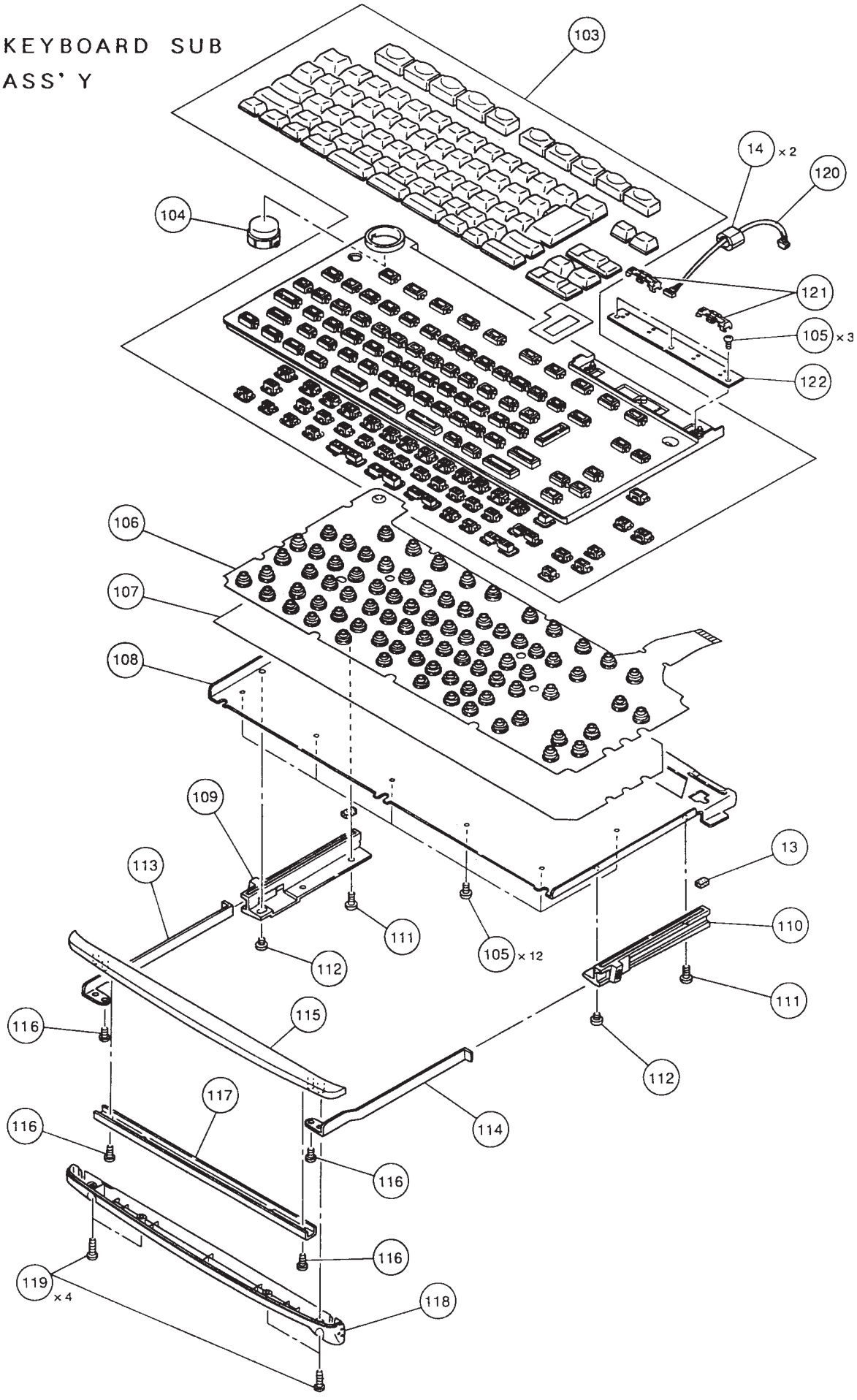
9–2 DISPLAY CASE ASS'Y



9—3 KEYBOARD SUB ASS' Y



10 PARTS LIST

N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
1. Component								
N	1	6512 0220	Printer cover V862JA	C210730-4	1	1		B
N	2	6401 4361	Paper guide L705JA	C210728A-1	1	1		B
N	3	6512 0210	Blind tape C-V862JA	C411862-4	1	20		B
	4	5860 0119	Bind screw	3x6 B	1	50		×
N	5	6512 0200	Blind tape B-V862JA	C411632-5	2	20		B
	6	5111 5629	Tapping screw	2.6x8 ZMC-3	2	50		×
N	7	6512 0150	Blind case L-V862JA	C210595-6	1	1		C
N	8	6512 0160	Blind case R-V862JA	C210596-6	1	1		C
N	9	6512 0191	Printer knob V862JA	C311110A-4	1	5		A
	10	5111 1893	Tapping bind screw	3x12	2	50		×
N	11	6512 0181	Slide knob V862JA	C310917A-5	2	20		C
N	12	6512 0233	Keyboard sub ass'y V862	C110807C*5	1	1		A
N	13	6400 7580	Cushion A-V878JA	C411819-1	1	20		C
	14	3035 0084	Ferrite core	BF30BC-12X15X7.3	2	10		C
N	15	3035 0203	Ferrite core	KR06FP400710	1	1		C
N	16	6395 0860	Screw A-V831JA	C41052-3	4	20		×
N	17	6399 3120	Earth plate C-V878JA	C411676-1	1	5		C
N	18	6401 4430	Earth plate A-L705JA	C411826-1	1	5		C
N	19	6399 3110	Earth plate B-V878JA	C411675-1	1	5		C
	20	5150 1489	Bind screw	3x8 B	1	50		×
	21	5111 2067	Tapping screw	3x10 B	8	50		×
N	22	6512 0171	Battery cover V862JA	C310782A-10	1	10		B
N	23	6512 0140	Battery label V862JA	C411881-2	1	20		C
N	—	6400 8821	Spacer B-V878JA	C411853A-1	1	10		×
N	—	6510 1450	Packing spacer L705JA	C412038-1	1	10		×
2. Upper case ass'y								
N	24	6512 0320	Upper case V862JA	C111028-1	1	1		C
N	25	3637 5220	Ferrite core	ZCAT2032-0930	1	1		C
	26	5560 0368	Wire band	T-18S	2	10		B
N	27	6399 2650	Shaft fixing plate V878JA	C310974-1	1	10		C
N	28	3122 1596	Clip	CS-2	1	20		C
	29	5111 1460	Tapping bind screw	3x10	2	50		×
N	30	6512 0311	Keyboard seal V862JA	C410906A-14	1	5		C
N	31	6399 2661	Tilt fixing plate V878JA	C411629A-1	1	10		C
	32	5111 2181	Tapping screw	2.3x5	1	50		×
N	33	6401 7480	Blind plate A-V840JA	C411978-1	1	20		C
3. Display case ass'y								
N	34	6510 6470	Cable sub ass'y L708JA	C412216*1	1	1		C
N	35	6512 0340	Display lower case V862JA	C110623-8	1	1		C
N	36	6512 0410	Hook knob L-V862JA	C411627-5	1	20		B
N	37	6512 0420	Hook knob R-V862JA	C411628-5	1	20		B
N	38	6512 0351	Hook L-V862JA	C310968A-5	1	20		B
N	39	6512 0361	Hook R-V862JA	C310969A-5	1	20		B
N	40	6399 2990	Spring V878JA	C411654-1	2	20		C
N	41	6512 0370	Hook holder L-V862JA	C310970-5	1	20		C
N	42	6512 0380	Hook holder R-V862JA	C310971-5	1	20		C
N	43	6395 0860	Screw A-V831JA	C41052-3	21	20		×
N	44	6399 2832	LCD cover V878JA	C110624B-1	1	1		C
N	45	3122 1750	Cold cathode tube	CBN6-292S-5N	1	1		B

Note: M — Minimum order and supply quantity
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N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
N	46	6397 4900	CFL cap V870JA	C411301-1	2	20		C
N	47	6399 8140	Adhesive tape A-V878JA	C411756-1	2	20		C
N	48	3122 1757	Light guide plate	LG1-V878	1	1		C
N	49	3122 1764	Reflection sheet	RS1-V878	1	5		C
N	50	6399 2940	LCD spacer C-V878JA	C411592-3	2	5		C
N	51	6399 2930	LCD spacer B-V878JA	C411592-2	1	10		C
N	52	6399 2920	LCD spacer A-V878JA	C411592-1	1	10		C
N	53	3335 3850	LCD unit	ECM-A0558-3	1	1		A
N	54	6399 2960	LCD spacer E-V878JA	C411592-5	1	10		C
N	55	6399 2950	LCD spacer D-V878JA	C411592-4	1	10		C
N	56	6512 0400	Shaft piece V862JA	C310973-5	1	20		C
	57	5111 1915	Tapping bind screw	2.3x6	4	50		×
N	58	3122 2002	Inverter unit	11233A-4	1	1		B
N	59	5860 6230	Tilt unit	30717-01A	1	1		C
N	60	6512 0331	Display upper case V862JA	C110621A-4	1	1		C
N	61	6512 0430	Display plate A-V862JA	C210929-2	1	1		C
N	62	6512 0390	Blind A-V862JA	C310972-5	2	20		B
4. Lower case ass'y								
N	63	1013 7786	Printer	PTMTM9512A	1	1		A
N	64	6395 0860	Screw A-V831JA	C41052-3	17	20		×
	65	5150 1489	Bind screw	3x8 B	2	50		×
N	66	3035 0189	Ferrite core	ZCAT1518-0730	2	1		C
N	67	6401 4550	Cable sub ass'y	C411874※1	1	1		C
N	68	6512 0290	Printer collar A-V862JA	C411824-4	2	20		C
	69	5150 1020	Bind screw	3x4	2	50		×
N	70	6510 0080	Earth plate E-L705JA	C411973-1	1	10		C
N	71	6401 4491	Printer fixing plate L705JA	C311111A-1	1	1		C
N	72	6399 3070	PCB collar A-V878JA	C411630-1	3	20		C
	73	5111 1893	Tapping bind screw	3x12	1	50		×
N	74	5860 3626	Wire band	T50MS	1	10		B
N	75	6401 4510	Earth plate D-L705JA	C311123-1	1	10		C
	76	5150 1381	Bind screw	3x4 B	6	50		×
N	77	6401 4501	FDD fixing plate L705JA	C311112A-1	1	1		C
N	78	3122 1596	Clip	CS-2	2	20		C
N	79	6397 4800	FFC joiner V870JA	C411362-1	1	5		B
N	80	1013 7779	FDD	EME-213CSUK	1	1		A
N	81	6399 3090	FDD insulation plate V878JA	C411653-1	1	20		C
N	82	6399 3050	FDD shield plate V878JA	C310977-1	1	5		C
N	83	3012 0847	Power supply unit	MPSZ-V862	1	1		A
N	84	3637 5220	Ferrite core	ZCAT2032-0930	1	1		C
N	85	6401 4540	Cable sub ass'y	C411802※1	1	1		C
N	86	6399 3080	PCB collar B-V878JA	C411631-1	1	20		C
	87	5860 1008	Screw	M1.4x4	1	50		×
N	88	6512 0281	Volume knob V862JA	C310955A-5	1	20		B
N	89	6501 0312	V862-1 ass'y	C111038※1	1	1		A
N	90	6399 3020	Insulation plate V878JA	C210599-1	1	10		C
N	91	6399 3011	Lower shield plate V878JA	C110627A-1	1	1		C
N	92	6512 0300	Printer collar B-V862JA	C311118-4	1	20		C
N	93	6512 0270	Lower case V862JA	C111029-1	1	1		C
N	94	6393 9270	Rubber foot V820JC	C410887-1	4	20		B
	95	6000 6091	Battery spring G67	A43656-1	1	10		C
	96	6345 2238	Battery spring A-G55	A42606B-1	1	10		C
N	97	6397 4831	Battery spring V870JA	C411315A-1	2	5		C

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N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
	98	6324 9297	Battery spring C-G164	A43733A-1	1	10		C
N	99	6399 3320	Cable sub ass'y	C411684※1	1	20		C
N	100	6399 3310	Cable sub ass'y	C411683※1	1	20		C
5. V862-1 ass'y								
N	101	4304 0140	PCB-L708JA-1 (without component)	C110856-1	1	1		×
	SP1	3501 5117	PCB connector 2P6	RE-H022TD-1190	1	20		C
N	CN1	3501 6391	Connector	B16B-XH-A	1	10		C
N	CN2	3501 5551	PCB connector	B8B-PH-K-S	1	20		C
N	CN3	3501 5208	FFC connector	5597-24CPB	1	5		C
	CN4	3501 1470	PCB connector	IL-S-2P-S2T2-EF	1	20		C
N	CN5	3501 5166	FFC connector	HLEM24S-1	1	10		C
N	CN6	3501 6398	FFC connector	HLEM30S-1	1	10		C
N	CN9	3501 6384	Connector	B6B-PH-K-S	1	20		C
N	CN10	3501 5551	PCB connector	B8B-PH-K-S	1	20		C
N	CN11	3501 6552	PCB connector	DF11-18DP-2DSA	1	10		C
N	CN12	3501 4480	DIN connector	MD-S9100-90	1	5		C
N	CN15	3501 5999	Connector	B4B-PH-K-S	1	20		C
N	CN16	3501 5992	PCB connector	IL-S-4P-S2T2-EF	1	20		C
	PIN1	3655 0070	Short pin	JM-2W-96	1	20		C
N	ROM1	2011 5054	LSI	UPD23C16000BCZ-043	1	1		A
N	ROM2	2011 5061	LSI	UPD23C16000BCZ-044	1	1		A
N	ROM3	2011 5068	LSI	UPD23C16000BCZ-045	1	1		A
N	ROM4	2011 5075	LSI	UPD23C16000BCZ-046	1	1		A
N	RAM1	2011 0448	LSI	MN42C4256AL-060708	1	1		A
N	RAM2	2011 3885	LSI	TC514800AZLL-80	1	1		A
N	RAM3	2011 3885	LSI	TC514800AZLL-80	1	1		A
N	RAM4	2011 2002	LSI	TC511665BZ-80	1	1		A
	IC1	2105 1533	CMOS IC	RH5RA50AA-T1	1	1		A
N	IC2	2105 2268	CMOS IC	RH5VA47AA-T1	1	5		A
N	IC3	2114 2275	Linear IC	M51958BFP-T2	1	5		A
N	IC4	2011 3241	LSI	UPD96101GD-001-5ML	1	1		A
	IC8	2105 1141	LMOS IC	TC4S66F-TE85R	1	5		A
N	IC9	2011 3115	LSI	PTCTS0804B	1	1		A
N	IC10	2105 2044	MOS IC	UPA1603CX	1	1		A
N	IC11	2114 2492	IC	M54646AP	1	1		A
N	IC12	2114 1736	Comparator	BA10393F-T1	1	10		A
N	IC13	2105 2044	MOS IC	UPA1603CX	1	1		A
N	IC14	2114 2499	IC	SLA7024M	1	1		A
N	IC16	2606 1610	Carbon film resistor	R20-0-M-T42V-T	1	20		C
N	IC17	2114 2219	Linear IC	PQ12RF21	1	1		A
N	IC18	2114 2254	Temperature senser IC	LM35DZ	1	1		A
	Q1	2251 0147	Transistor	2SB1117(K.U)-T	1	1		B
N	Q2	2280 1505	Chip transistor	FN1A4M-T1B	1	20		B
	Q3	2252 0112	Chip transistor	2SC1623-T1B(L6, L7)	1	1		B
	Q4	2259 0266	Digital transistor	FB1J3P-T	1	20		B
	Q5	2252 0112	Chip transistor	2SC1623-T1B(L6, L7)	1	1		B
N	Q6	2280 1505	Chip transistor	FN1A4M-T1B	1	20		B
N	Q7	2259 1295	Chip transistor	FP1J3P-T1B	1	20		B
N	Q8	2259 1302	Chip transistor	FN1F4M-T1B	1	20		B
	Q9	2259 0308	Digital transistor	FA1A4M-T1B	1	20		B
	Q10	2259 0308	Digital transistor	FA1A4M-T1B	1	20		B
	Q11	2259 1309	Digital transistor	FB1A4M-T1B	1	20		B
N	Q12	2259 1302	Chip transistor	FN1F4M-T1B	1	20		B

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N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
N	Q13	2259 1295	Chip transistor	FP1J3P-T1B	1	20		B
N	Q14	2280 1505	Chip transistor	FN1A4M-T1B	1	20		B
	Q15	2259 0308	Digital transistor	FA1A4M-T1B	1	20		B
N	Q16	2259 1407	Chip transistor	FN1L3M-T1B	1	20		B
	BZ1	3240 2089	Buzzer	PKM22EPT-2001	1	1		C
N	X1	2590 1155	Ceramic oscillator	CSA32.00MX241-TF01	1	5		B
	X3	2520 1819	Ceramic oscillator	CST16.00MXWOC3	1	5		B
N	F1	2114 2247	IC protector	ICP-N38-T104	1	20		B
N	ZD1	2360 1764	Zener diode	RD51PB-T1	1	10		C
N	ZD2	2360 1750	Zener diode	RD12PB-T1	1	10		C
	D1	2390 0035	Schottky diode	SB007-03CP-TB	1	20		C
N	D3	2390 0987	Chip diode	DAN202K-T146	1	20		C
	D4	2390 0035	Schottky diode	SB007-03CP-TB	1	20		C
	D5	2390 0035	Schottky diode	SB007-03CP-TB	1	20		C
	D6	2390 0630	Chip schottky diode	RB110C-T101	1	20		C
	D9	2390 0630	Chip schottky diode	RB110C-T101	1	20		C
N	VR1	2765 1260	Volume	RK08H111-5KA-L-CC	1	5		C
N	VR2	2775 1127	Half-fixed resistor	EVN-D8AA03B15	1	20		C
N	VR3	2775 1071	Half-fixed resistor	EVN-D8AA03B54	1	20		C
N	RM1	2725 0700	Module resistor	MS3327F-S	1	20		C
	RM2	2720 4457	Module resistor	MS2237F-S	1	20		C
N	RM3	2725 0280	Module resistor	MS22310F-S	1	20		C
N	RM4	2725 0749	Module resistor	MS2239F-S	1	20		C
	L1	3013 0602	Inductor	SBT-0180W	1	1		C
N	L2	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L3	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L4	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L5	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L6	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L7	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L8	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L9	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L10	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L11	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L12	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L13	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L14	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L15	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L16	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L17	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L18	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L19	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L20	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L21	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L22	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L23	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L24	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L25	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L26	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L27	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L28	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L29	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L30	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L31	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L32	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C

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N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
N	L33	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L34	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L35	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L36	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L37	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L38	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L39	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L40	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L41	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L42	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L43	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L44	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L45	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L46	2795 2429	Chip resistor	MCR10EZHJ150	1	20		C
N	L75	3013 1141	Chip inductor	BLM31A02PT	1	20		C
N	EM1	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM2	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM3	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM4	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM5	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM6	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM7	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM8	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM9	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM10	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM11	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM12	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM16	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM17	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM18	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM19	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM24	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM25	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM26	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM27	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM28	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM29	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM30	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM32	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM33	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM34	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM35	3025 0665	EMI filter	ZBF503D-00TA	1	20		C
N	EM36	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM37	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM38	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM39	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM40	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM41	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM42	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM43	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM44	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM45	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM46	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM47	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM48	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C

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N	EM49	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM50	3025 0672	EMI filter	EXC-EMT271BTB	1	20		C
N	EM51	3025 0665	EMI filter	ZBF503D-00TA	1	20		C
	R1	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R2	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R3	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R4	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R5	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R6	2795 3479	Chip resistor	MCR03EZHJ100	1	20		C
	R7	2795 3003	Chip resistor	MCR03EZHJ473	1	20		C
	R8	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R9	2795 3017	Chip resistor	MCR03EZHJ104	1	20		C
	R10	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R11	2795 1372	Chip resistor	MCR25JZHJ102	1	10		C
N	R12	2795 3885	Chip resistor	MCR03EZHG103	1	20		C
N	R13	2795 3570	Chip resistor	MCR03EZHG102	1	20		C
	R14	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
N	R15	2795 3514	Chip resistor	MCR03EZHJ334	1	20		C
	R17	2795 2926	Chip resistor	MCR03EZHJ101	1	20		C
	R18	2795 3500	Chip resistor	MCR03EZHJ222	1	20		C
	R19	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R20	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R21	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R22	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R23	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R24	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R25	2795 3528	Chip resistor	MCR03EZHJ470	1	20		C
	R26	2795 3549	Chip resistor	MCR03EZHJ823	1	20		C
	R27	2795 2926	Chip resistor	MCR03EZHJ101	1	20		C
	R28	2792 0926	Chip resistor	MCR10EZHJ100	1	20		C
N	R29	2795 3920	Chip resistor	MCR03EZHG302	1	20		C
N	R30	2795 4046	Chip resistor	MCR10EZHG330	1	20		C
N	R31	2795 3535	Chip resistor	MCR03EZHJ474	1	20		C
	R32	2795 3493	Chip resistor	MCR03EZHJ221	1	20		C
	R33	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R34	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R35	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R40	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R41	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R42	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R43	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R44	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R45	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
	R46	2795 2940	Chip resistor	MCR03EZHJ102	1	20		C
	R48	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R49	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R50	2795 3507	Chip resistor	MCR03EZHJ332	1	20		C
	R51	2795 3367	Chip resistor	MCR03EZHJ224	1	20		C
	R52	2795 3542	Chip resistor	MCR03EZHJ562	1	20		C
	R53	2795 2758	Chip resistor	MCR10EZHF1502	1	20		C
	R54	2795 3346	Chip resistor	MCR03EZHJ105	1	20		C
	R55	2795 3521	Chip resistor	MCR03EZHJ393	1	20		C
	R56	2795 2996	Chip resistor	MCR03EZHJ223	1	20		C
N	R57	2795 3584	Chip resistor	MCR25JZHF1800	1	20		C
	R58	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C

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	R59	2795 2961	Chip resistor	MCR03EZHJ472	1	20		C
N	R62	2795 3227	Chip resistor	MCR10EZHF5102	1	20		C
N	R63	2795 3220	Chip resistor	MCR10EZHF1802	1	20		C
	R64	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
	R67	2795 1260	Chip resistor	MCR10EZHF1003	1	20		C
N	R68	2795 3899	Chip resistor	MCR10EZHF7501	1	20		C
N	R69	2795 3864	Chip resistor	MCR10EZHF1000	1	20		C
	R70	2795 1204	Chip resistor	MCR10EZHF3901	1	10		C
	R72	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
N	R77	2795 3402	Chip resistor	MCR10EZHF4702	1	20		C
N	R78	2795 3402	Chip resistor	MCR10EZHF4702	1	20		C
N	R79	2795 3878	Chip resistor	MCR10EZHF5100	1	20		C
N	R80	2795 3906	Chip resistor	MCR10EZHF56R0	1	20		C
N	R81	2795 3871	Chip resistor	MCR10EZHF2401	1	20		C
N	R82	2795 3871	Chip resistor	MCR10EZHF2401	1	20		C
N	R83	2775 1225	Metal film resistor	CRH100-FH11J-1R0	1	20		C
N	R84	2775 1225	Metal film resistor	CRH100-FH11J-1R0	1	20		C
N	R85	2795 3395	Chip resistor	MCR10EZHF5602	1	20		C
N	R86	2795 3395	Chip resistor	MCR10EZHF5602	1	20		C
	R87	2795 3773	Chip resistor	MCR10EZHF1001	1	20		C
N	R88	2775 1225	Metal film resistor	CRH100-FH11J-1R0	1	20		C
N	R89	2775 1225	Metal film resistor	CRH100-FH11J-1R0	1	20		C
	R90	2795 3773	Chip resistor	MCR10EZHF1001	1	20		C
	R91	2795 3542	Chip resistor	MCR03EZHJ562	1	20		C
	R92	2795 3346	Chip resistor	MCR03EZHJ105	1	20		C
	R93	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R94	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R95	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R96	2795 3521	Chip resistor	MCR03EZHJ393	1	20		C
N	R97	2795 3584	Chip resistor	MCR25JZHF1800	1	20		C
	R98	2795 3528	Chip resistor	MCR03EZHJ470	1	20		C
	R99	2795 2975	Chip resistor	MCR03EZHJ103	1	20		C
	R100	2795 1204	Chip resistor	MCR10EZHF3901	1	10		C
N	R101	2795 3948	Chip resistor	MCR03EZHG391	1	20		C
N	R102	2795 3073	Chip resistor	MCR03EZHG153	1	20		C
	R103	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R104	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R105	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R106	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R107	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R108	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R109	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R110	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	R111	2792 0985	Chip resistor	MCR10EZHJ220	1	20		C
	JP4	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
	JP13	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
	JP14	2795 3360	Chip resistor	MCR03EZHJ000	1	20		C
N	C1	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C2	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C3	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C4	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C5	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C6	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C7	7103 4509	Chip capacitor	GRM40B102K50PT	1	20		C
N	C8	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C

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	C9	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	C10	2807 1180	Electrolytic capacitor	10RE2-47-T2-T	1	20		C
N	C12	2897 1071	Chip capacitor	GRM40CH100D50PT	1	20		C
	C13	2807 1112	Electrolytic capacitor	10RE2-100-T2-T	1	20		C
	C14	2807 1180	Electrolytic capacitor	10RE2-47-T2-T	1	20		C
N	C15	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
	C16	2897 0861	Chip capacitor	GRM40B473K25PT	1	10		C
N	C17	2895 1274	Tantalum capacitor	TPDN1VR68K8S	1	20		C
N	C18	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C19	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C20	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
	C21	2801 7196	Electrolytic capacitor	10RE2-33-T2-T	1	20		C
N	C23	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
	C24	2801 7196	Electrolytic capacitor	10RE2-33-T2-T	1	20		C
N	C27	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
	C28	2802 9784	Electrolytic capacitor	50RE3-3300	1	1		C
	C30	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
N	C31	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
	C33	2807 6014	Electrolytic capacitor	25RE2-100-T2-T	1	20		C
	C35	2807 1112	Electrolytic capacitor	10RE2-100-T2-T	1	20		C
N	C37	2606 1610	Carbon film resistor	R20-0-M-T42V-T	1	20		C
	C38	2801 7196	Electrolytic capacitor	10RE2-33-T2-T	1	20		C
	C39	2801 7196	Electrolytic capacitor	10RE2-33-T2-T	1	20		C
N	C40	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C41	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C42	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C43	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C44	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C45	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C46	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C47	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C48	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
N	C49	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
	C51	2805 3134	Electrolytic capacitor	10RE2-22-T2-T	1	20		C
	C52	2805 3134	Electrolytic capacitor	10RE2-22-T2-T	1	20		C
	C53	2805 3134	Electrolytic capacitor	10RE2-22-T2-T	1	20		C
N	C54	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
	C55	2801 7210	Electrolytic capacitor	25RE2-47-T2-T	1	20		C
	C56	2807 1015	Electrolytic capacitor	16RE2-47-T2-T	1	10		C
	C58	2801 7413	Electrolytic capacitor	10RE2-330-T2-T	1	20		C
N	C59	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C60	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C61	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
N	C73	2818 3721	Ceramic capacitor	GRM40CH101J50PT	1	20		C
	C74	2801 7196	Electrolytic capacitor	10RE2-33-T2-T	1	20		C
N	C76	7103 5973	Chip capacitor	GRM40CH470J50PT	1	20		C
	C77	2807 1015	Electrolytic capacitor	16RE2-47-T2-T	1	10		C
	C78	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	C79	2801 7077	Electrolytic capacitor	50RE2-100-T2-T	1	10		C
N	C80	7103 5959	Chip capacitor	GRM40B821K50PT	1	20		C
N	C81	7103 5959	Chip capacitor	GRM40B821K50PT	1	20		C
N	C82	7103 5959	Chip capacitor	GRM40B821K50PT	1	20		C
	C83	2801 7077	Electrolytic capacitor	50RE2-100-T2-T	1	10		C
N	C84	7103 5959	Chip capacitor	GRM40B821K50PT	1	20		C
N	C85	2895 0560	Tantalum capacitor	TPDN1C220M8S	1	5		C

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N	C87	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
N	C88	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
N	C89	2897 1218	Chip capacitor	GRM40B222K50PT	1	20		C
N	C90	2897 1218	Chip capacitor	GRM40B222K50PT	1	20		C
N	C91	2897 1064	Chip capacitor	GRM40B471K50PT	1	20		C
N	C92	2897 1232	Chip capacitor	GRM40B104K25PT	1	20		C
N	C93	2897 1232	Chip capacitor	GRM40B104K25PT	1	20		C
N	C94	2805 9792	Chip capacitor	GRM42-6B104K50PT	1	20		C
	CB1	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB2	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB3	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB4	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB5	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB6	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB7	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB11	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB15	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB16	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB18	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB19	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB20	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB21	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB22	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB23	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB25	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB26	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB27	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB28	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB29	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB30	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB36	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
	CB37	2813 2310	Chip ceramic capacitor	GRM40F104Z25PT	1	20		C
6. L704-CLK ass'y								
N	102	4304 0161	PCB-L704-CLK (without component)	C311438A-1	1	10		×
N	IC1	2105 2415	MOS IC	MC14007UBFR1	1	10		A
N	CN1	3501 6727	SB connector	MB3P-90-2	1	20		C
	X1	7110 0693	Crystal oscillator	DT-26SJ	1	10		B
N	R2	2796 1470	Chip resistor	RC210-206-J-T	1	20		C
N	R3	2796 1484	Chip resistor	RC1608-333-J-T	1	20		C
N	R4	2796 1484	Chip resistor	RC1608-333-J-T	1	20		C
N	R5	2796 0791	Chip resistor	RC1608-104-J-T	1	20		C
N	R6	2796 1477	Chip resistor	RC1608-000-T	1	20		C
N	R7	2796 1477	Chip resistor	RC1608-000-T	1	20		C
N	C2	2845 3164	Chip capacitor	MCH185A120JK	1	20		C
N	C3	7103 6337	Chip capacitor	GRM39CH070D50PT	1	20		C
	C4	7103 4791	Chip capacitor	GRM39F104Z16PT	1	20		C
N	C5	2895 1568	Chip tantalum capacitor	SK-1A335M-RA	1	20		C
7. Keyboard sub ass'y								
N	103	6512 0470	Key sub ass'y	C111037※1	1	1		B
N	104	6512 0441	Menu key V862JA	C310915A-4	1	20		C
	105	5111 1915	Tapping bind screw	2.3x6	15	50		×

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×: No stock recommended

N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
N	106	6399 2510	TAC film sub ass'y	C110587✱1	1	1		B
N	107	6399 3140	Keyboard spacer V878JA	C310986-1	1	5		C
N	108	6399 3130	Keyboard plate V878JA	C110583-1	1	1		C
N	109	6399 3180	Arm guide L-V878JA	C310979-1	1	10		C
N	110	6399 3190	Arm guide R-V878JA	C310980-1	1	10		C
N	111	6395 0860	Screw A-V831JA	C41052-3	2	20		×
	112	5150 1381	Bind screw	3x4 B	2	50		×
N	113	6399 3201	Handle arm L-V878JA	C310946A-1	1	1		C
N	114	6399 3211	Handle arm R-V878JA	C310947A-1	1	1		C
N	115	6512 0451	Handle upper case V862JA	C210584A-5	1	1		C
	116	5111 1095	Screw	3x8	4	50		×
N	117	6399 3171	Handle plate V878JA	C310942A-1	1	1		C
N	118	6512 0461	Handle lower case V862JA	C210585A-5	1	1		C
	119	5111 1460	Tapping bind screw	3x10	4	50		×
8. V878-DR sub ass'y								
N	120	6399 3340	Cable sub ass'y	C411682✱1	1	5		C
N	121	2765 1113	Slide volume	RS15H11A-L10-10KB	2	5		B
N	122	4311 5370	PCB-V878-DR	C310918-1	1	10		×
9. Others								
N		1013 7744	3.5 inch floppy disk sheet	MF2DDCSOV862A1A01A	1	1		A
N		1013 7751	3.5 inch floppy disk sheet	MF2DDCSOV862A2A01A	1	1		A
N		1013 7758	3.5 inch floppy disk sheet	MF2DDCSOV862A3A01A	1	1		A
N		1013 7765	3.5 inch floppy disk sheet	MF2DDCSOV862A4A01A	1	1		A
N		1013 7772	3.5 inch floppy disk sheet	MF2DDCSOV862A5A01A	1	1		A
N		1014 7030	AC adaptor	AD-8800	1	1		A
N		3613 1246	Converter plug	CCT5902-0702	1	1		A

Note: M — Minimum order and supply quantity
N — New parts
Q — Quantity

Ra:Rank A: Essential
B: Stock recommended
C: Others
×: No stock recommended

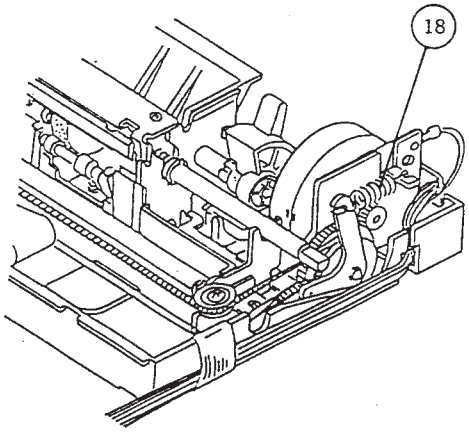
11 PRINTER

11-1 DISASSEMBLE/ASSEMBLE

11-1 Disassemble

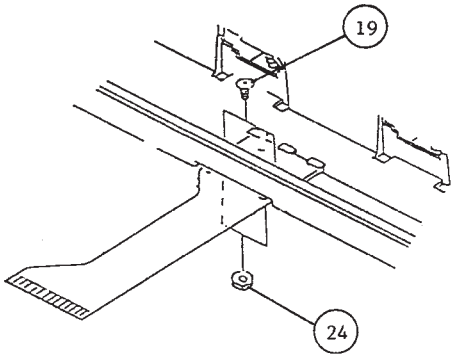
1) CR tension spring

Remove the CR tension spring ⑱.



2) FPC fixing screw

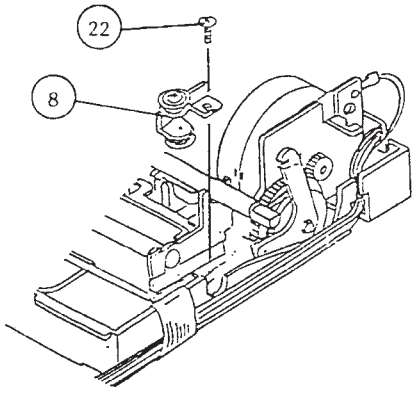
Holding two Nuts ㉔, and release two FPC fixing screws ⑲.

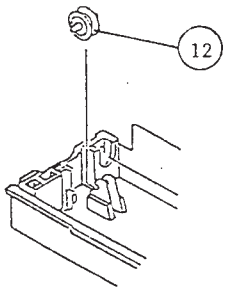


3) Sub plate

Release the Screw ㉒, and remove the Sub plate unit ⑧.

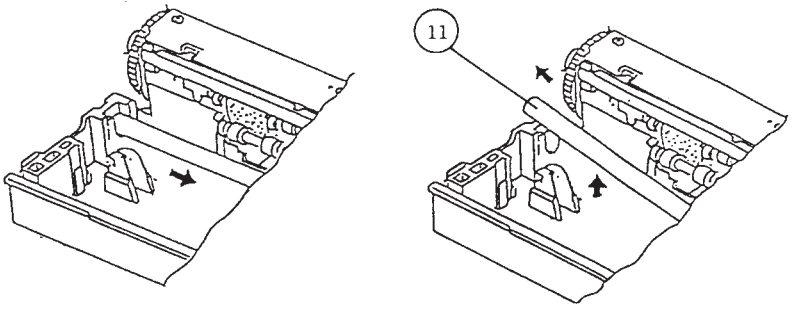
Remove the CR pulley unit ⑫.



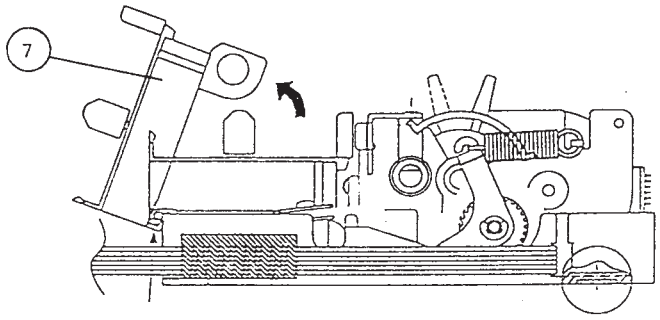


4) Main shaft and Base carrier unit 3

Slide the Main shaft ⑪ to the right side then after removing the Main shaft from left side, lift up the Main shaft and remove it.

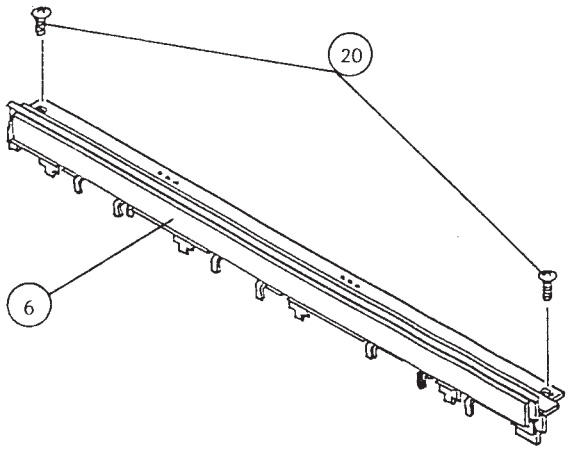


Move the Base carrier unit 3⑦ to the center to locate it between the roller plate units. Then lift up and remove the Base carrier unit 3⑦ .



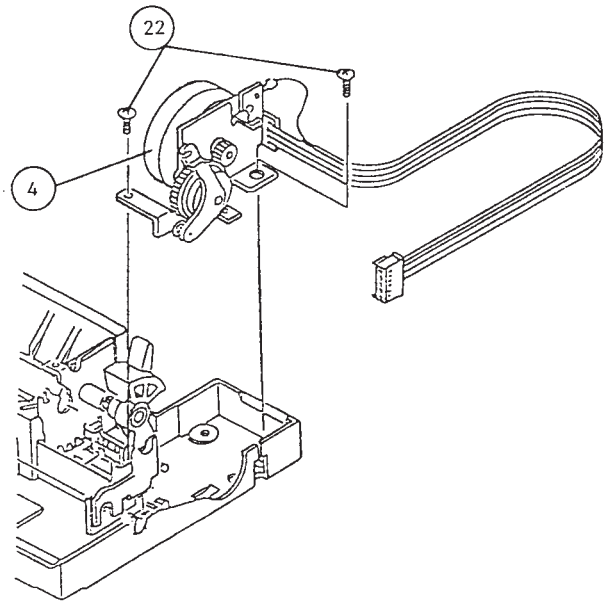
5) Platen fixing stand unit

Release two Screws ⑳ and lift up the Platen fixing stand unit⑥ .



6) CR plate unit 2

Release two Screws (22) and remove the CR plate unit 2(4) .



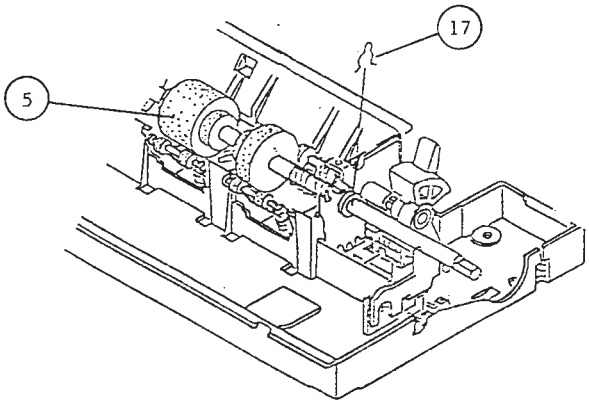
7) Rubber roller unit

Remove the LF gear (A) (13) and LF gear (B) (14).
(Note: Never use the LF gear (A) when it removed once caused the hook of gear will be broken.)

Remove the Stopper (17).

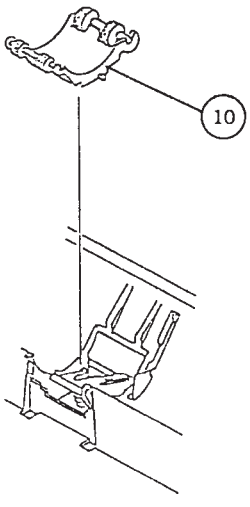
Remove the Paper bush (16) (right side) to out side.

Slide the Rubber roller unit(5) to the left side, then remove the left side shaft of paper bush.
(Lift up the Rubber roller unit under the release lever is off position.)



8) Roller plate unit

Remove four Roller plate units (10).



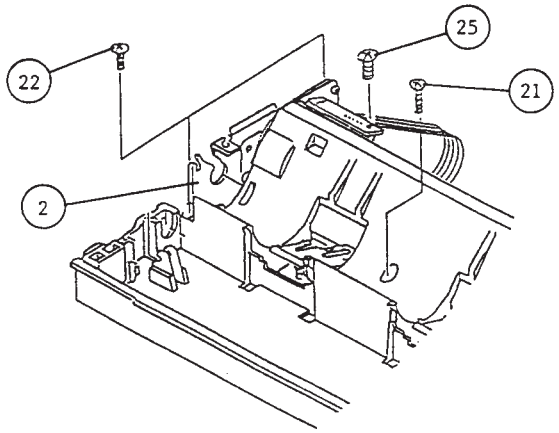
9) LF plate unit

Release two Screws ㉒ for fixing LF plate unit② .

Release one Screw ㉕ for fixing LF motor PCB.

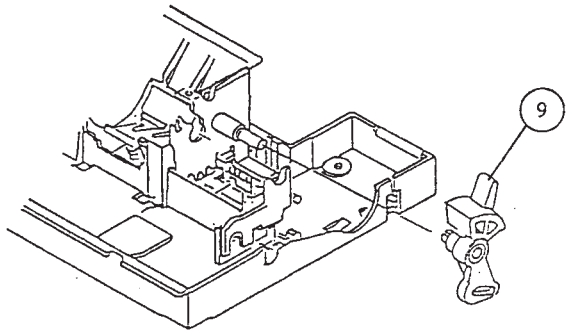
Release one Screw ㉑ for fixing PE sensor.

To remove the LF plate unit② , lift up the front and push it to backward.



10) Release lever

Remove the Release lever⑨ from the Right plate unit③ when you remove the Release lever, as it is pressed by the springs which are holding paper, while pressing the Paper holding plate, and remove it.
(Note: Never use the Release lever when it removed once caused the hook of lever will be broken.)

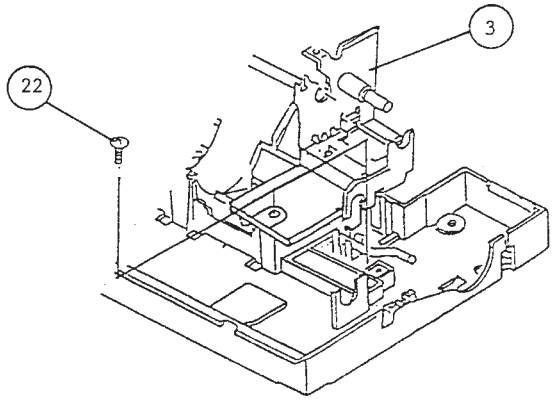


11) Right plate unit

Release two Screws ㉒ and one Screw ㉓ on the Right plate unit③ .

Push the hook of the Frame unit① that is fixing the back side of the Right plate unit③ by using a screw driver.

Lift up the Right plate unit③ , then remove it from the hook part of the Frame unit① to slide it to the right side.

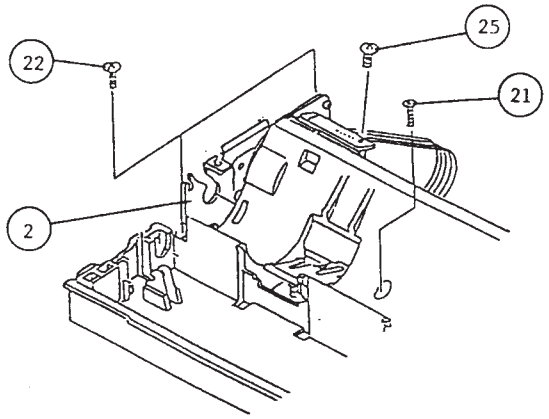


11-2 Assemble

1) LF plate unit

Mount the LF plate unit② sliding from backward to forward on the Frame unit① .

After positioning a hook, tighten two Screws ㉒ and one Screw ㉕.

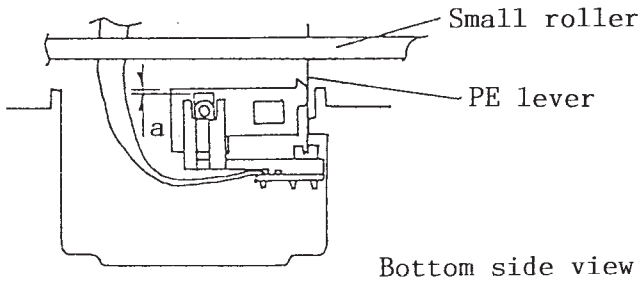


2) PE sensor

The lead wire of PE sensor must be laid between the Small roller release shaft and the Frame unit.

Fix the PE sensor by one Screw ㉑. (Note: the distance "a" must be 0 ~ 1mm.)

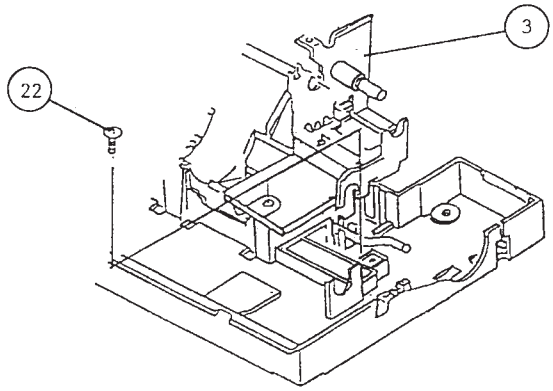
Check whether the PE lever can move smoothly. Also, check whether the spring of the PE lever is set to the Small roller release shaft correctly.



3) Right plate unit

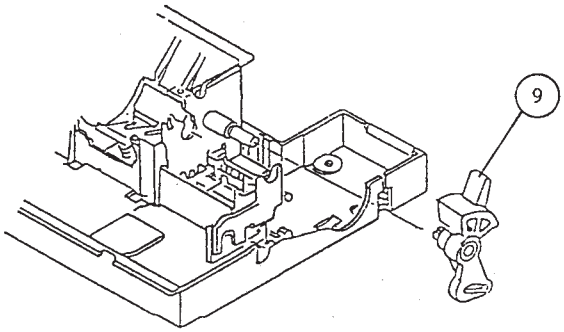
Insert the hook part of the Right plate unit③ to the Frame unit① , then push it down.
(Note: In this time, pay attention of the hook part to push until it is hooked correctly.)

Tighten two Screws ㉒ and one Screw ㉓.
(Note: Never use the power more than 5Kg-cm torque as the frame will be broken.)



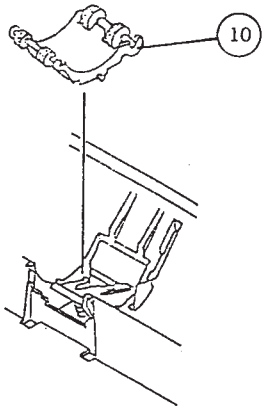
4) Release lever

Insert the Release lever⑨ to the Release shaft at the Right plate unit③ .
(Note: Pay attention to push the lever until it is hooked correctly.)



5) Roller plate unit

Mount four Roller plate units ⑩ to the Frame unit① under the Release lever⑨ is off position after checking the Small roller plate and the Small roller spring are mounted correctly.

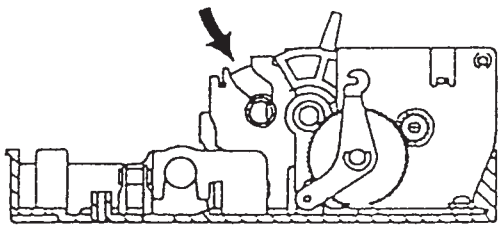


6) Rubber roller unit

Insert the Rubber roller spring ⑮ to the Rubber roller shaft.

And shift it to the stopper side. Also, shift the Left side paper bush to the Rubber roller gear side.

Then, mount the Rubber roller unit⑤ to the Frame unit① under the Release lever⑨ is off position.



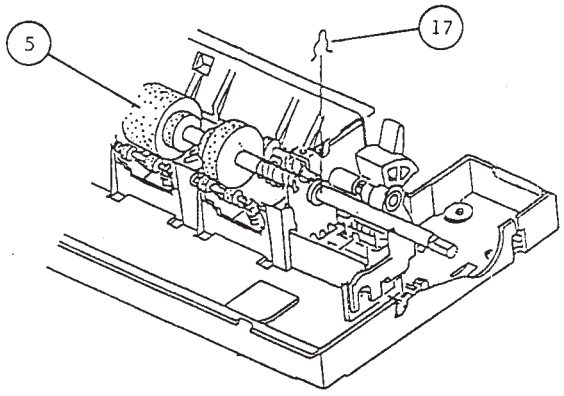
7) Paper bush

Insert the Paper bush ⑯ to the Rubber roller shaft.

Slide the Rubber roller unit ⑤ to the right side, then mount the Left side paper bush to the LF plate unit ② .

Next, mount the Right side paper bush to the Right plate unit ③ .

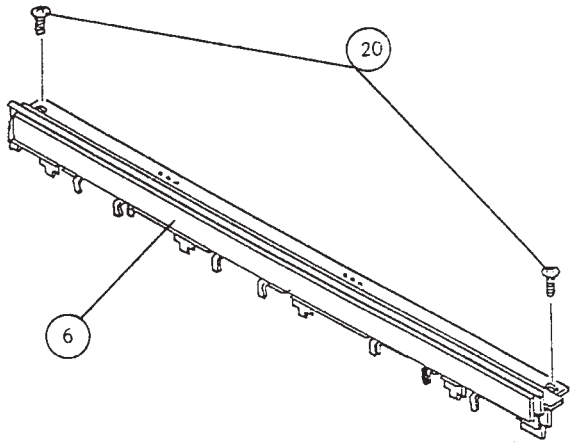
Fix the Stopper ⑰ by using plier to the position of groove on the shaft under the Release lever ⑨ is on position.



8) Platen fixing stand unit

Put the Platen fixing stand unit ⑥ to the groove of the LF plate unit ② , and tighten two Screws ⑳ .

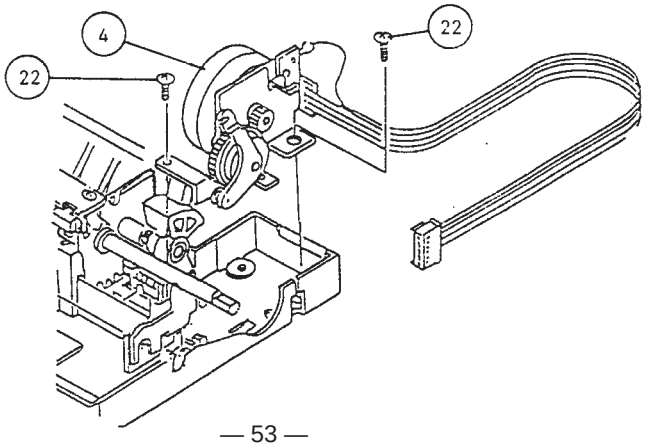
First, tighten the left side screw, then tighten the right side screw.



9) CR plate unit 2

Fix the CR plate unit 2 ④ to the groove of the Frame unit ① for positioning.

Tighten two Screws ㉒ for fixing the CR plate unit 2 ④ .



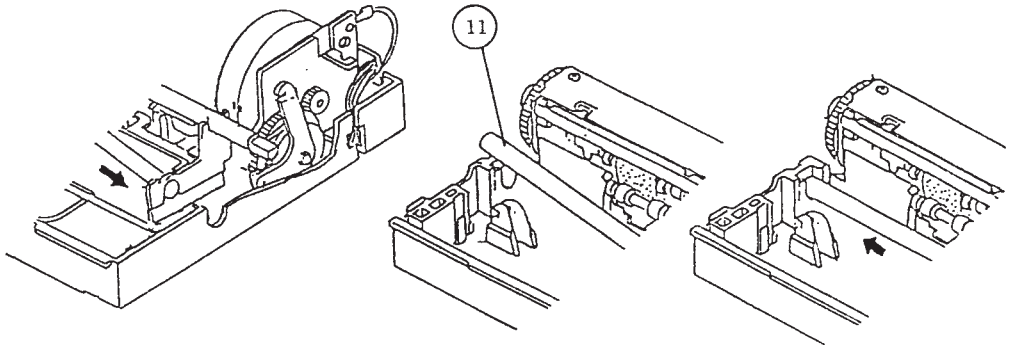
10) Base carrier unit 3

Insert the Base carrier unit 3⑦ to the Roller plate unit ⑩, and fix it to the Frame unit①.

Insert the Main shaft ⑪ to the Left shaft holder of the Base carrier unit 3⑦, and set it in the Main shaft holder which consist of the frame and the Right plate unit③.

Press down the left side of the Main shaft ⑪, and insert it to the Main shaft holder.

Make sure the hook of the Base carrier unit 3⑦ to fit into the rail of the Frame unit①.

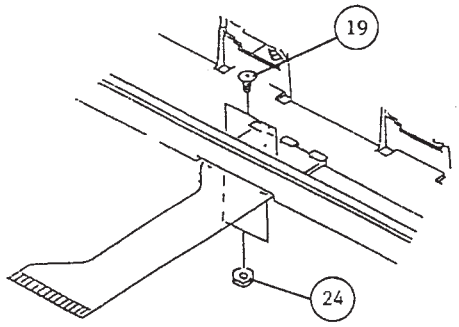


11) FPC

Pull out the FPC from the slit of the Frame unit①, then make a position of FPC to adjust the hole of PCB and the boss of the Frame unit①.

Tighten two Screws ⑲ with two Nuts ㉔ to fix the FPC.

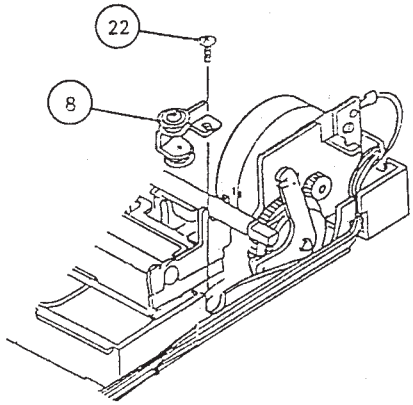
Check whether the position of PCB is set to the hook part of the Frame unit① correctly.



12) Sub plate unit

Fix the Sub plate unit⑧ to the Frame unit① by Screw ㉒.

Pay attention for the gap between the Sub plate unit⑧ and the tip of the Main shaft ⑪.
It must be no gap.

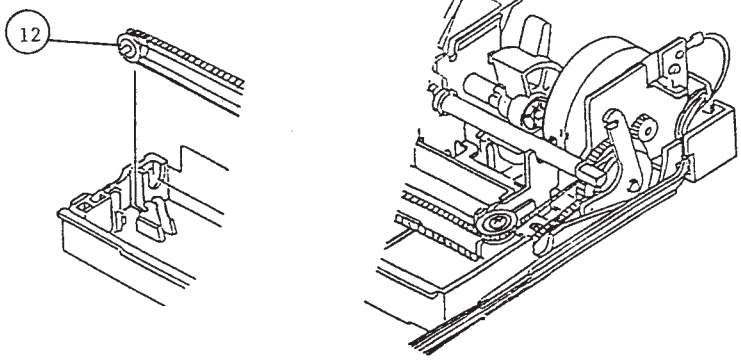


13) Printer belt

Set the Printer belt of the Drive pulley and the CR pulley unit ⑫.

And at last time, set the belt to the CR pulley unit ⑫, and push it down to the Pulley holder on the Frame unit①.

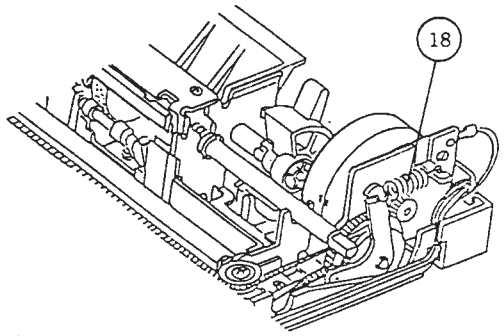
Pay attention for the direction of the teeth of the Printer belt.



14) Tension spring

Set the Tension spring ⑱ between the Tension lever and the hook of the CR plate unit 2④.

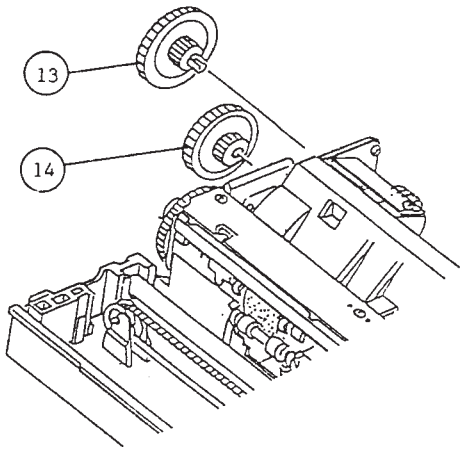
Pay attention the twist of the spring.



15) LF gear (A) and LF gear (B)

Insert the LF gear (B) ⑭ and LF gear (A) ⑬ to the LF plate unit②.

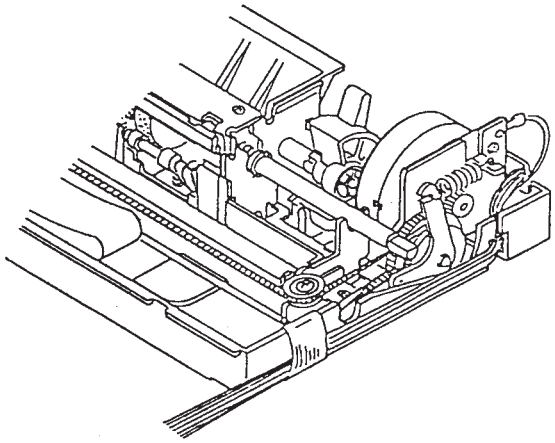
At this time, make sure the teeth of each gears to set properly without brakage.



16) Cable wiring

Fix the Cable of the CR motor to the right side of the Frame unit① by using the adhesive tape.

When you fix the Printer unit to the Lower case, pay attention to cable cutting.



11—2 MAINTENANE and REPAIR

11-2-1 Maintenance

① Cleaning

- To clean the Platen ass'y, use an alcohol with soft cloth.
- To clean the Printer head, use an aicohol with Q-tip to remove dust and ink.
  (Never touch the Printer head by hand as the head weaken by solt specially.)
- It is better to remove a paper dust and other dust in some time. (Use an electric cleaner.)
- Use only an alcohol to clean the printer and never use the other cleaner.
- For lubrication, refer the secetion 11-3-1 in this manual.
  (Never use a different type of oil or grease.)

11-2-2 Repair

For this printer after service or repair, it is divided 3 repair levels according to the skil of the technical matters.

① Repair level

Level A: This repair needs some knowledge of general mechanism and method, and it is not necessary to take a technical training.

Level B: This repair needs a higher knowledge of printer mechanism and measurement tools, and it needs some technical training and experience.

Level C: This repair needs the highest knowledge of printer mechanism and measurement tools, and it needs skilled technical training and experience.

② Procedure of repair

When the trouble is happened, check the trouble condition well, then find out and check the problem points to repair it.

Symptom: Find out the symptom from the list.

Condition: Confirm whether the trouble is the same on the list.

Cause: As the cause is listed on the list, find out the original problem point.
Also, as the repair level is listed in this area, consider it.

Check point: As the check point is listed in this area, follow the mentioned details for checking.

Repair action: Repair the printer by this procedure. In case the repair is not finished, refer the other cause in this list.

③ Necessary tools

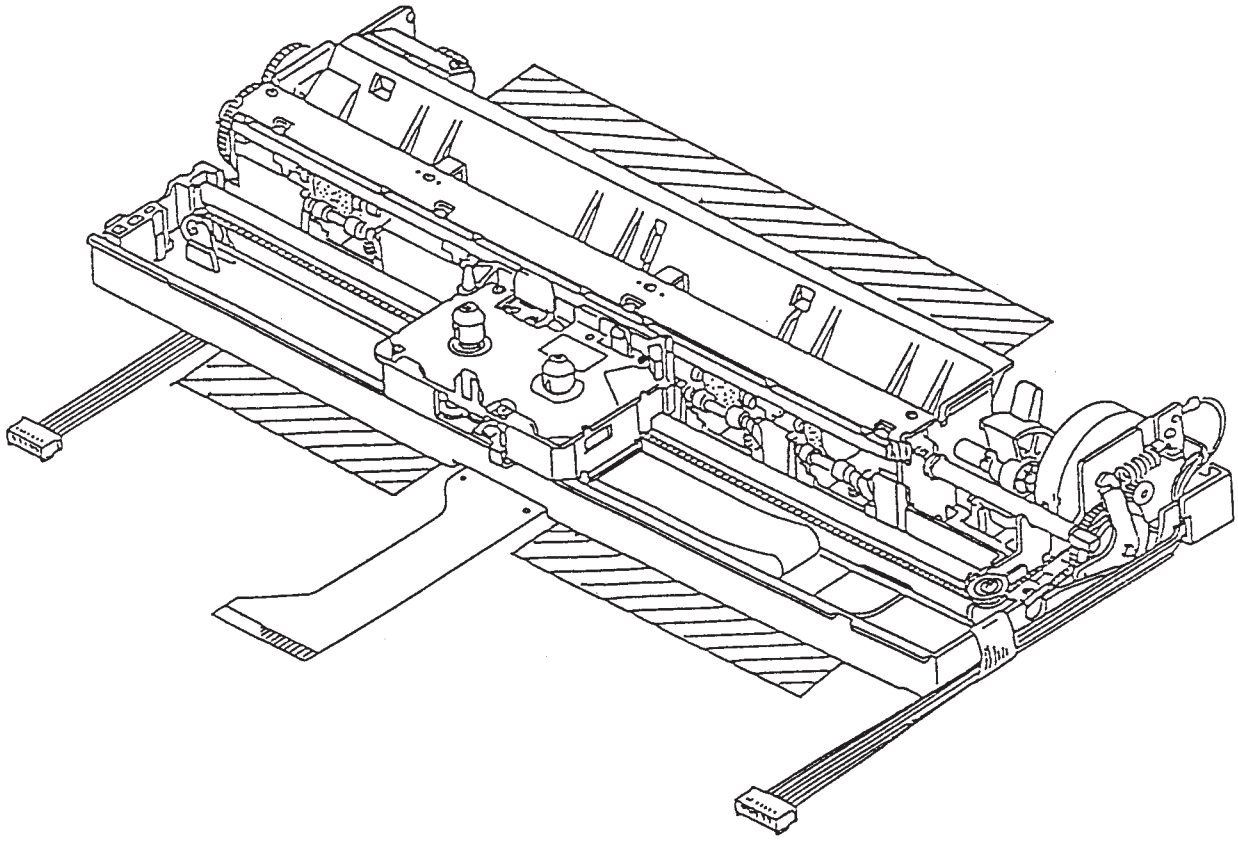
- Screw driver
- Tweezer
- Plier
- Q-tip

	Symptom	Situation		Cause	Level	Check points	Repair action
1	No printing (Dot line missing)	No printing	1	Miss connection of connector	A	Check the connection	Re-connect the connector
			2	Head voltage is low	A	Check the volume	
			3	Ribbon feeding	A	Check the Ribbon feeding	Set the Ribbon cassette
			4	Head brakage	C		Replace the Base carrier unit
			5	Cutting of FPC	C	Check the cable wiring	
2	Printing quality problem	Ubnormal printing	1	Dirt on the Platen	A	Check the Platen surface	Clean the Platen
			2	Gear stuck	B	Check the play of Gear	Remove the dust, replace the Gear
			3	Dry up oil of the Main shaft	A	Check the oil of Main shaft	Lubricate the Main shaft
		Dot line missing	1	Dirt on the Platen	A	Check the Platen surface	Clean the Platen
			2	Platen stuck	B	Check the play of Platen	Replace the Platen fixing stand unit
			3	Scratch of Platen rubber	B	Check the Platen surface	Replace the Platen fixing stand unit
			4	Ribbon feeding	A	Check the Ribbon feeding	Set the Ribbon cassette
			5	Ribbon defected	B	Compare other Ribbon	Replace the Ribbon cassette
			6	Transformation of Head	C	Check the Head unit	Replace the Base carrier unit
			7	Paper quality	A	Check the paper quality	Use the Casio original paper
3	Dirt		1	Dirt of the Head	A	Check the Head	Clean the Head
			2	Ribbon defected	A	Compare other Ribbon	Replace the Ribbon cassette
4	No working	Carriage stuck	1	Miss connection of connector	A	Check the connection	Connect the connector
			2	Cabel cutting	B	Check the cable of Motor	Replace the CR plate unit
5	PE sensor problem	"Paper end" message	1	Miss connection of connector	A	Check the connection	Connect the connector
			2	Cable cutting	B	Check the cable of PE sensor	Replace the LF plate unit
			3	Miss positioning of PE sensor	B	Check the position of sensor	Adjust the position of PE sensor
		Not "Paper end" message	1	Miss positioning of PE sensor	B	Check the position of sensor	Adjust the position of PE sensor
			2	Transformation of PE lever	C	Check the moving of PE lever	Replace the Frame unit
			3	Miss mounthing of lever spring	A	Check the PE lever spring	Set the spring correctly
6	RE detection problem	Not detected "Ribbon end"	1	Miss connection of connector	A	Check the connection	Connect the connector
			2	FPC cutting	C	Check the FPC	Replace the Base carrier unit
			3	RE sensor defected	C		Replace the Base carrier unit
7	Paper feeding problem	Not rotate the Rubber roller	1	Miss connection of connector	A	Check the connection	Connect the connector
			2	Cable cutting	B	Check the cable of LF motor	Replace the LF plate unit
		Not feed the paper correctly	1	Transformation of Roller plate	B	Check the road of feeding	Replace the Roller plate unit
			2	Gear brakage and dust	A	Check the Gear brakage	Remove the dust, replace the Gear
			3	Paper dust on Rubber roller	B	Check the Rubber roller	Replace the Rubber roller
			4	Dust of paper feeding points	B	Check the paper feeding	Remove the dust, clean the roller

11-2-3 Caution of handling

1) To handle the printer

Basically, handle the ▨ part to carry the printer avoiding a trouble cause.



2) About the part must be handle gently

① Never force to the fixing part of the Motor.

② Never pull and bend the FPC.

③ Do not move the carriage to right and left by hand. Specially, when the head is pressed to the Platen, it may be destroyed the printer mechanism. When it is necessary to move the carriage, release the Head at first, then turn the drive pulley gear by hand to move the carriage.

④ Never pull the lead wire strongly.

3) About the part of inhibition touching

① Never touch the Head surface.

4) Caution of storage

Do not keep the printer in the dusty and wettish place for strage. Also, avoid the place where direct sun will fall. When the storage time becomes very long, keep the package with dry material in the dry place.

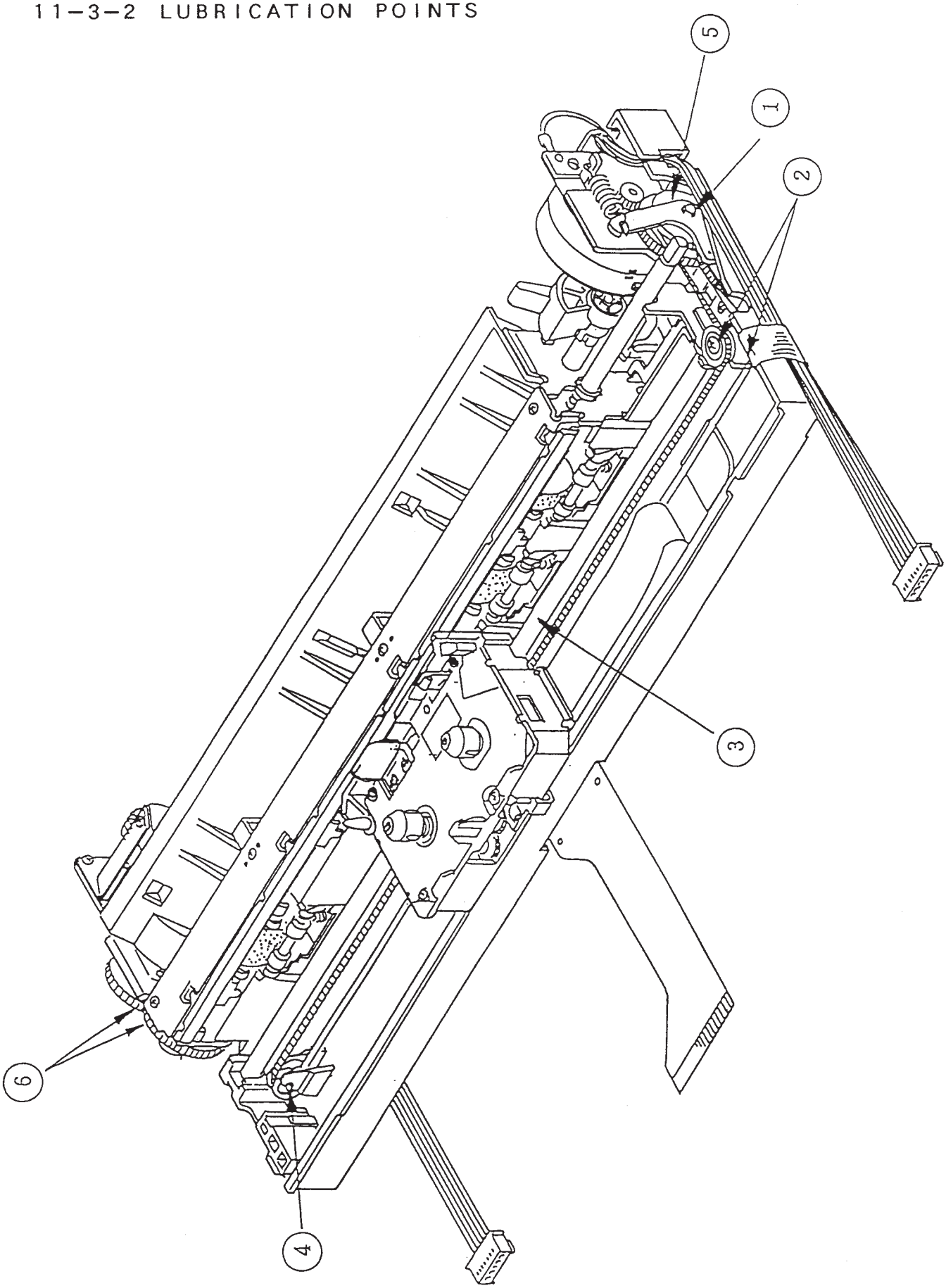
11—3 LUBRICATION

11-3-1 Standard for Lubrication

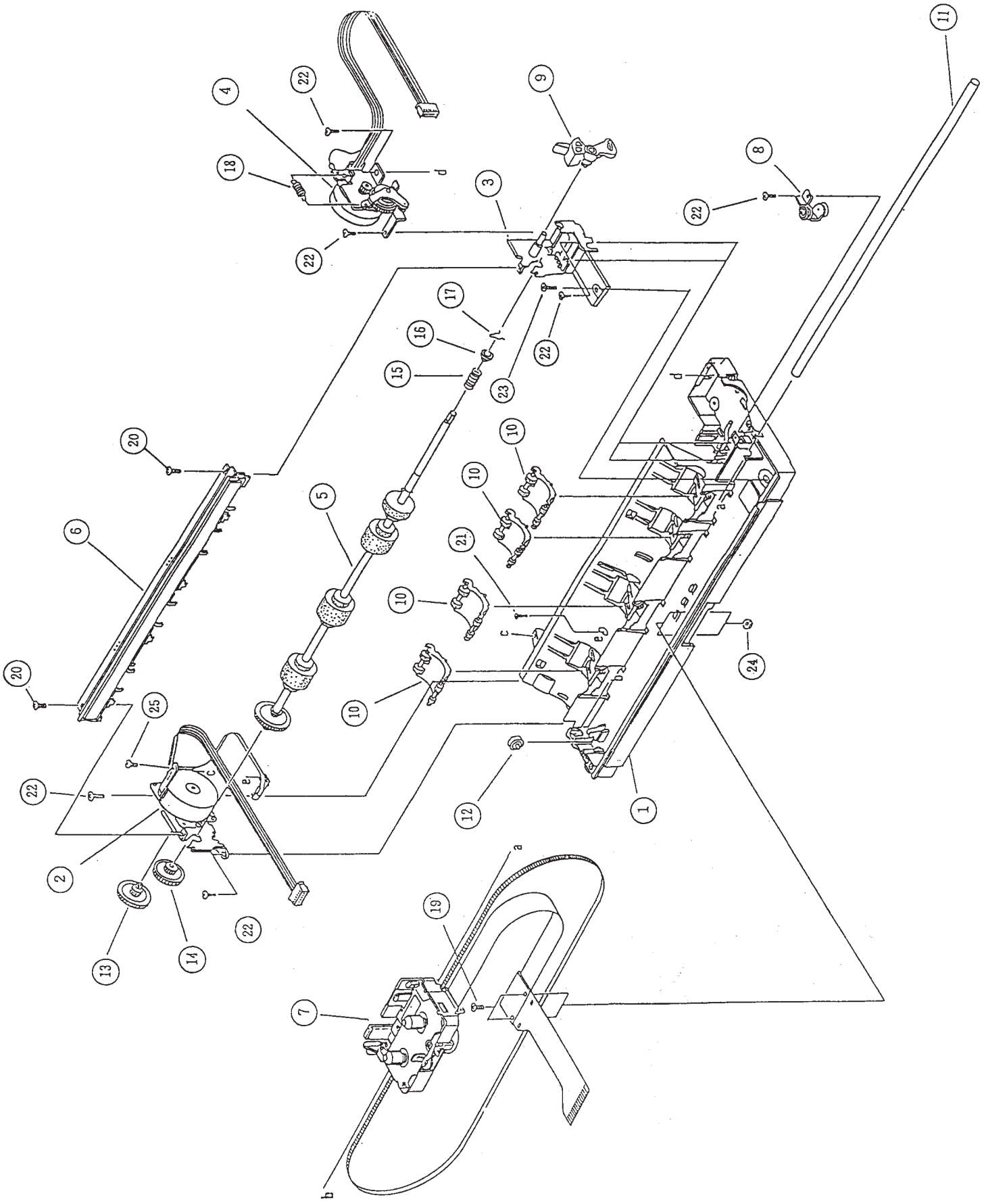
The oils used in this printer are listed below:
(Never use other oils.)

No.	Lubrication point	Oil name	Note
1	Pulley shaft and Drive pulley	T6	
2	Pulley shaft and small pulley of the sub plate	T6	2 points
3	Main shaft and Carriage part	T6	
4	Small pulley and holding part of Frame	EM-60L	
5	Tension lever driving pulley	T6	
6	Gearing part of LF gear (A), (B) and Rubber roller gear	T6	2 points

11-3-2 LUBRICATION POINTS



11—4 ASSEMBLY VIEW

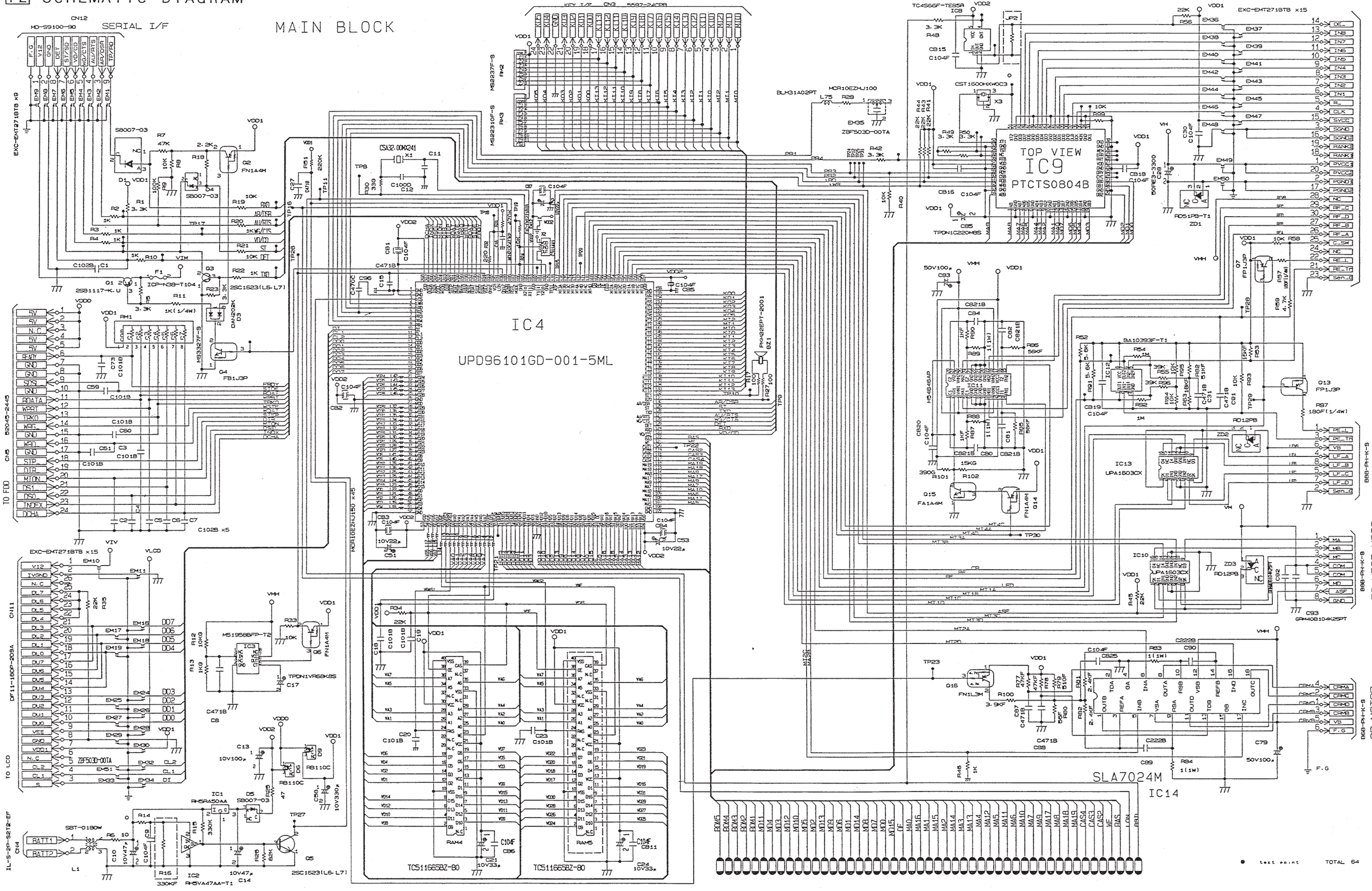


N	Item	Code No.	Part Name	Specification	Q	M	Unit Price N.R. Yen(¥) (FOB:JAPAN)	Ra
N	1	0009 1827	Frame unit	DM5458	1	1		C
N	2	0009 1880	LF plate unit	DM5520	1	1		C
N	3	0009 1829	Right plate unit	DM5359	1	1		C
N	4	0009 1881	CR plate unit 2	DM5510	1	1		C
N	5	0009 1831	Rubber roller unit	DM10001	1	1		C
N	6	0009 1832	Platen fixing stand unit	DM5355	1	1		C
N	7	0009 1833	Base carrier unit 3	DM5377	1	1		B
N	8	0009 1834	Sub plate unit	DM10005	1	1		C
N	9	0009 1835	Release lever	M13053	1	5		B
N	10	0009 1836	Roller plate unit	DM10004	4	1		C
N	11	0009 1837	Main shaft	M06171	1	1		C
N	12	0009 1838	CR pulley unit	DM10006	1	5		C
N	13	0009 1839	LF gear (A)	M11129	1	5		B
N	14	0009 1840	LF gear (B)	M11134	1	20		C
N	15	0009 1841	Rubber roller spring	M31124	1	10		C
N	16	0009 3133	Paper bush	M14064	1	20		C
N	17	0009 1842	Stopper	MJYE72010	1	10		C
N	18	0009 1843	Tension spring	M31252	1	20		C
N	19	0009 1844	FPC fixing screw	M06204	2	20		×
N	20	0009 1845	Screw M2xL4	S96200001	2	20		×
N	21	0009 1846	Screw M2xL8	S96200003	1	20		×
N	22	0009 1847	Screw M2.6xL8	S96260002	7	20		×
N	23	0009 1848	Screw	S51260002	1	20		×
N	24	0009 1849	Nut M2	N13020010	2	20		×
N	25	0009 1850	Screw M2.6xL5	S11260001	1	20		×

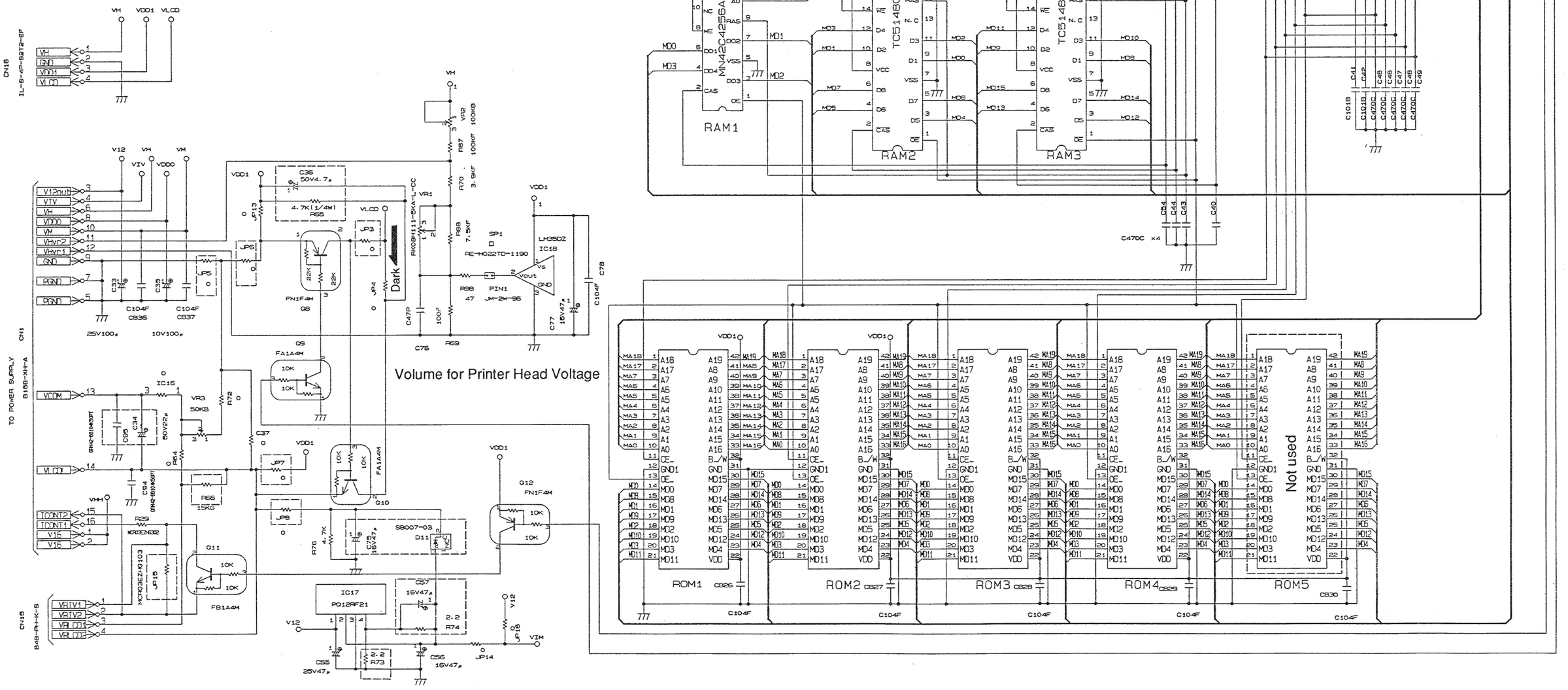
Note: M — Minimum order and supply quantity
N — New parts
Q — Quantity

Ra:Rank A: Essential
B: Stock recommended
C: Others
×: No stock recommended

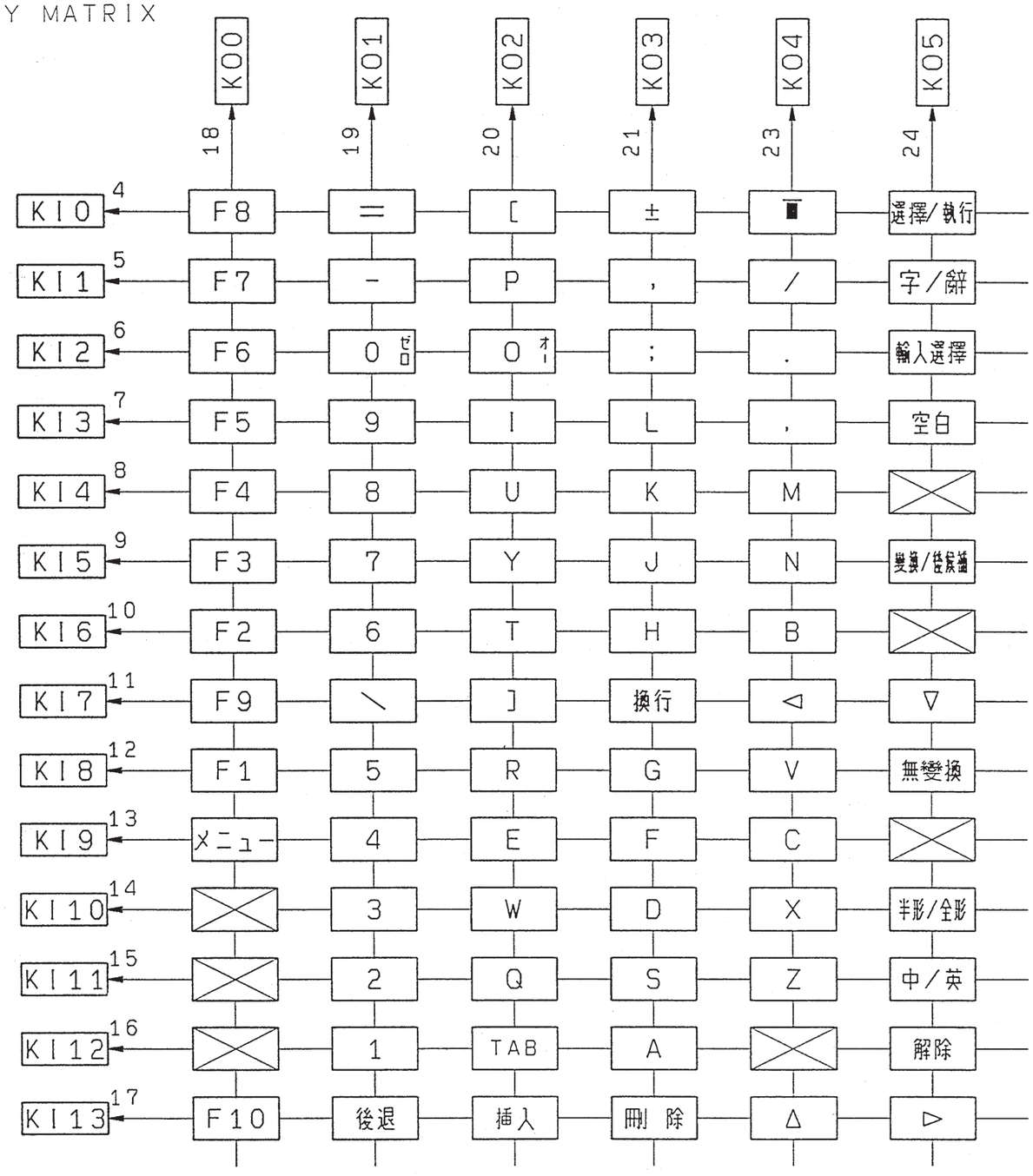
12 SCHEMATIC DIAGRAM

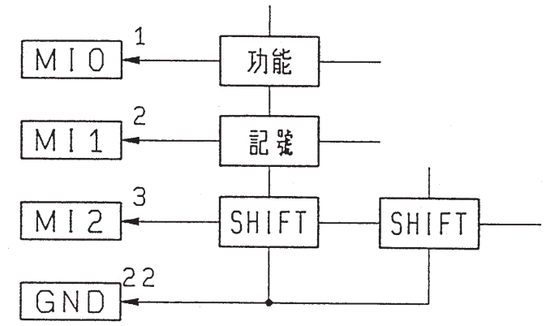


MEMORY BLOCK



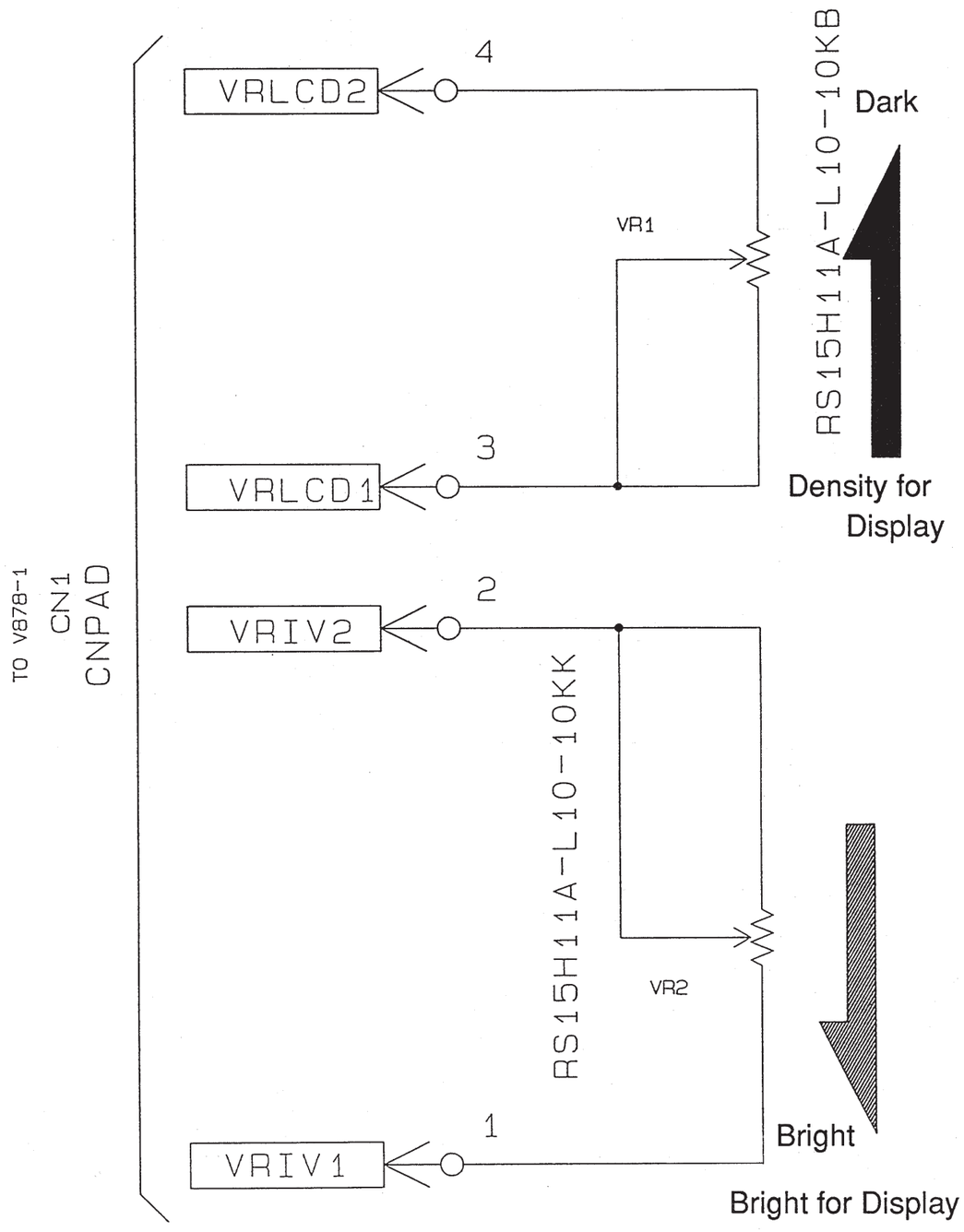
KEY MATRIX





--MAIN KEY BOARD--

LCD VOLUME BLOCK



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